

1

Connecting Monitors and Other Equipment

You can use a single monitor to switch between the PC environment and the Mac OS environment. Or you can simultaneously display both environments on two monitors. Any monitor you use must be connected in a specific way for you to access your PC Compatibility Card software.

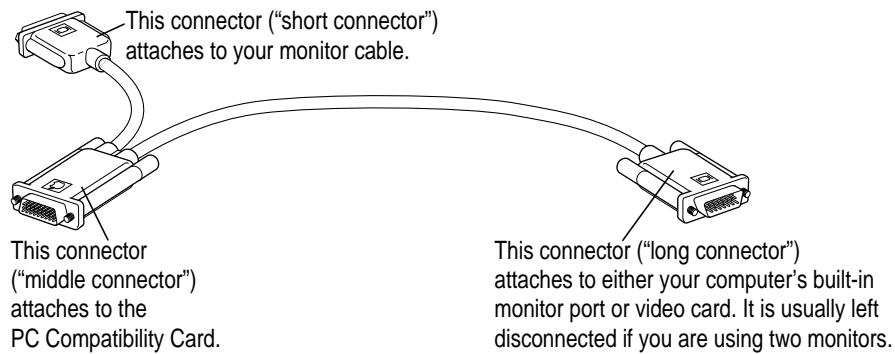
To learn how to connect your monitor or monitors, first read about using the loopback cable on the next page. Then turn to the section on connecting a single monitor or the section on connecting two monitors. Follow the instructions for your model of Power Macintosh computer. If you have an AudioVision or AppleVision monitor, turn to the section with additional instructions for these monitors.

After you've connected your monitor, read the end of this chapter to find out how to connect other equipment.

Using the loopback cable

Your PC Compatibility Card came with a loopback cable. It has three connectors: middle, long, and short. No matter how you connect your monitors, these connectors always attach to the same ports:

- The middle connector attaches to the port on your PC Compatibility Card; this is the port that lets you see the PC environment.
- The long connector attaches to either your computer's built-in monitor port, or to a video card (you may leave this end disconnected if you are using two monitors).
- The short connector attaches to your monitor cable.

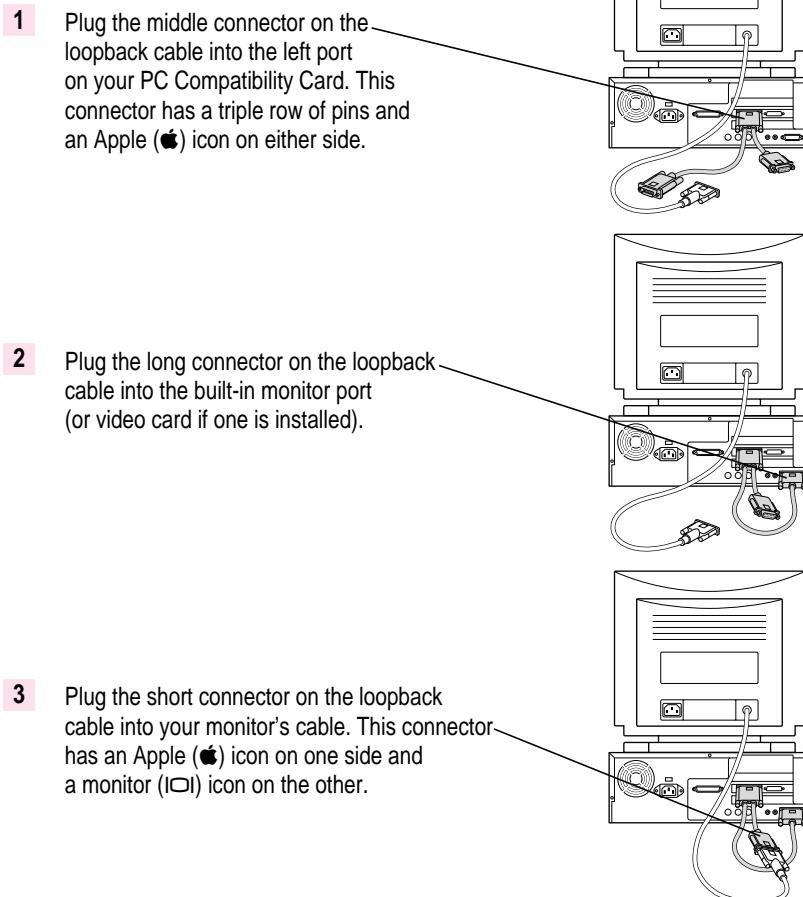


Connecting a single monitor

Connecting a monitor to your Power Macintosh 4400

Before you begin, make sure your computer and monitor are unplugged. Then follow these steps using the loopback cable:

WARNING Do not plug a monitor into the joystick port (marked with the icon ), and do not plug a joystick into a monitor port (marked with the icon ). Serious damage can result to your equipment.

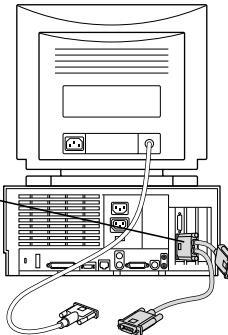


Connecting a monitor to your Power Macintosh 7300

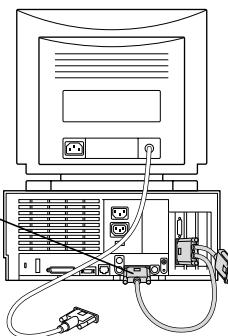
Before you begin, make sure your computer and monitor are unplugged. Then follow these steps using the loopback cable:

WARNING Do not plug a monitor into the joystick port (marked with the icon ) and do not plug a joystick into a monitor port (marked with the icon ). Serious damage can result to your equipment.

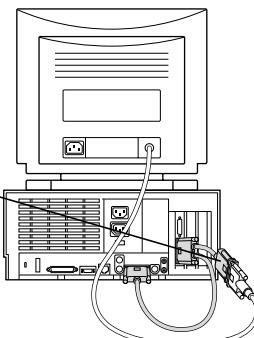
- 1 Plug the middle connector on the loopback cable into the bottom port on your PC Compatibility Card. This connector has a triple row of pins and an Apple (apple icon) on either side.



- 2 Plug the long connector on the loopback cable into the built-in monitor port (or video card if one is installed).



- 3 Plug the short connector on the loopback cable into your monitor's cable. This connector has an Apple (apple icon) on one side and a monitor (monitor icon) on the other.



Connecting two monitors

If you connect two monitors, you see the Mac OS environment on one and the PC environment on the other. The monitor connected to the PC Compatibility Card shows the PC environment. You can also switch between Mac OS and PC environments on this monitor if you have a video card.

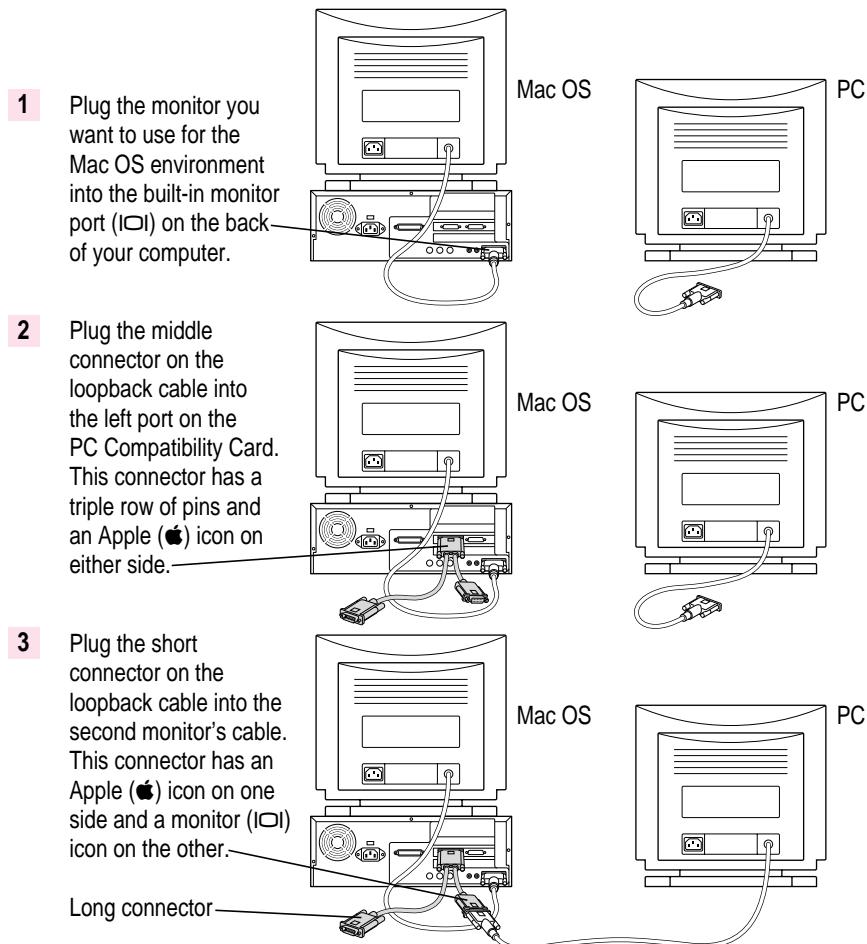
You can use any combination of Mac OS-compatible and PC-compatible monitors (with the proper cable adapters, available from your monitor vendor or Apple-authorized dealer).

Multiple-scan monitor: If you want to use a multiple-scan monitor from a manufacturer other than Apple to display the PC environment, you also need to use a VGA-to-Macintosh adapter (available from your computer vendor). You connect this adapter between the monitor's cable and the loopback cable.

WARNING Do not plug a monitor into the joystick port (marked with the icon )⁶, and do not plug a joystick into a monitor port (marked with the icon ). Serious damage can result to your equipment.

Connecting two monitors to your Power Macintosh 4400

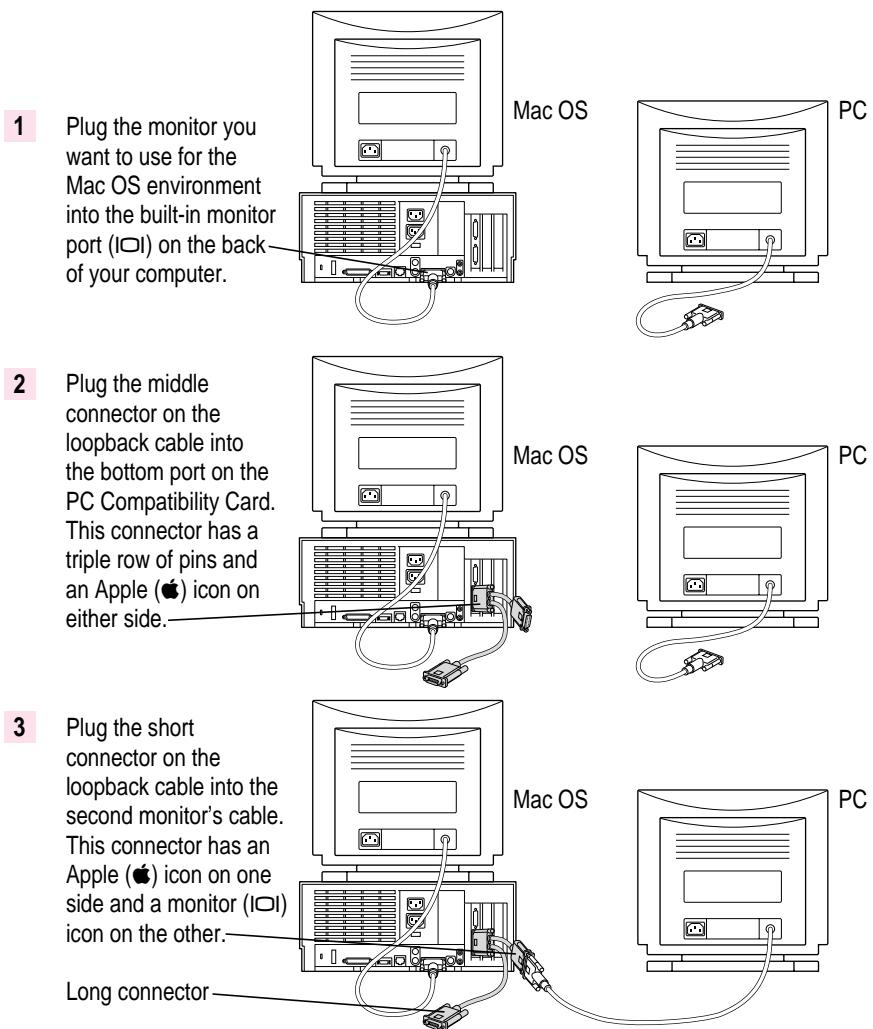
Before you begin, make sure your computer and monitor are unplugged. Then follow these steps using the loopback cable:



You can leave the long connector unplugged. Or, if you have a video card and want one monitor to switch between the Mac OS and PC environments, you can plug the long connector into the video card port.

Connecting two monitors to your Power Macintosh 7300

Before you begin, make sure your computer and monitor are unplugged. Then follow these steps using the loopback cable:



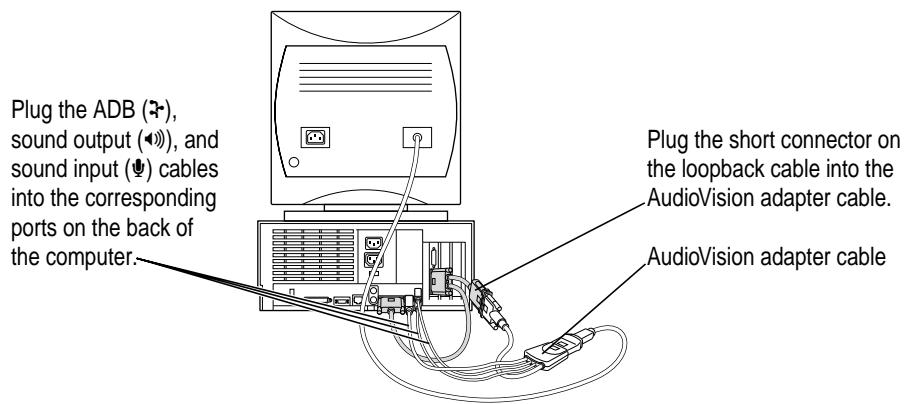
You can leave the long connector unplugged. Or, if you have a video card and want one monitor to switch between the Mac OS and PC environments, you can plug the long connector into the video card port.

Connecting an AudioVision monitor

To connect an AudioVision monitor to your Macintosh computer, first connect the loopback cable to the appropriate ports on your computer as you would with any other monitor:

- Plug the middle connector on the loopback cable into the PC Compatibility Card port with the triple row of pins and Apple (apple icon) on either side.
- Plug the long connector on the loopback cable into the computer's built-in monitor port or video card.

Then plug the short end of the loopback cable into the AudioVision adapter cable. Plug the remaining cables into the corresponding ADB, sound input, and sound output ports on the back of your computer. (For more information, see the manual that came with your AudioVision monitor.)



Connecting an AppleVision monitor

You connect your AppleVision monitor like any other monitor, except you also have to connect an extra cable—the ADB cable, which is thinner than the others. Plug this cable into the ADB port (marked with ADB) on the back of your computer. (For more information, see the manual that came with your AppleVision monitor.)

If you are using an AppleVision monitor to display the PC environment only, you will need to adjust the video manually, by pressing the buttons on the monitor.

Connecting a pointing device

If you have a standard ADB (Apple Desktop Bus) one-button mouse or other pointing device, you can simulate the behavior of a two-button PC mouse using keys on your keyboard. For more information, see the section “Using a Pointing Device” in Chapter 4.

You can also use an ADB multibutton mouse or other pointing device and configure it to work as a PC mouse. To use a multibutton pointing device in the PC environment, you need to install the appropriate software. See the manual that came with your computer and pointing device for more information.

You can connect a pointing device to any available ADB port (marked with  on your Macintosh computer).

Pointing devices designed specifically for a PC are not recommended for use with your Macintosh computer.

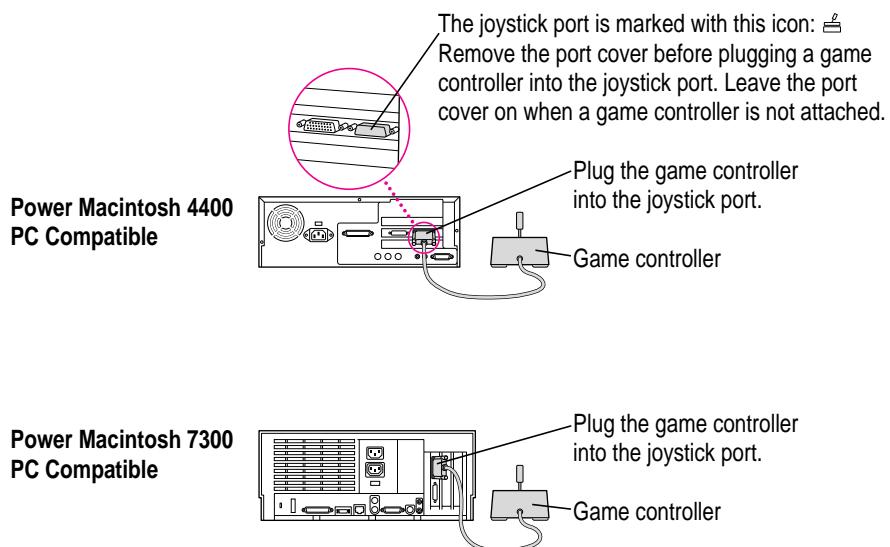
Connecting a MIDI device

You can connect a MIDI (musical instrument digital interface) device to the game controller port that comes on some models of the PC Compatibility Card. To connect a MIDI device, you need a Sound Blaster–compatible MIDI-to-joystick adapter (available from your computer dealer). For instructions on connecting devices to the joystick port, see the next section, “Connecting a PC Game Controller.”

Connecting a PC game controller

Your PC Compatibility Card comes with a game controller port. To connect a PC game controller, such as a joystick, remove the plastic cover on the game controller port. Then plug your game controller into the port.

WARNING Do not plug a monitor into the joystick port (marked with the icon ), and do not plug a joystick into a monitor port (marked with the icon ). Serious damage can result to your equipment.



Connecting a printer

You can print from the PC environment on any printer connected to your Macintosh computer.

You can also purchase a PC Serial and Parallel Card (available from your Apple-authorized dealer), which allows you to connect a PC-compatible printer. A printer connected to this card can print only from the PC environment. You can also purchase a package such as GDT's PowerPoint.

For more information, see "Setting Printer Options" in Chapter 3.

Connecting to a network

You can connect to shared disks on an AppleTalk or other Mac OS-compatible network using Macintosh file sharing.

By installing the appropriate networking software, you can also connect your computer to a PC-compatible network, such as a Novell NetWare network.

For more information, see the section “Setting Up Your PC on a Network” in Chapter 3 and Appendix D, “Installing Network Client Software.”

Connecting a modem or other serial device

Even in the PC environment, you can use a modem or other serial device connected to the Macintosh serial port. Macintosh computers do not have the same serial interface that PCs have, so your modem or communications software may require adjustment when connected to this port.

You can also connect your modem to a PC Serial and Parallel Card (available from your Apple-authorized dealer), which has a true RS-232 PC serial interface. A modem or other serial device connected to this card can only be accessed from the PC environment.

For more information, see Chapter 3, “Setting Up the PC Environment.”

Connecting a security dongle

If your PC software requires a security dongle, you can connect it by purchasing a PC Serial and Parallel Card (available from your Apple-authorized dealer).

2

Installing the PC Compatibility Card Software

This chapter describes how to install software for your PC Compatibility Card.

The CDs that came with your PC Compatibility Card contain the software you need to use the card in both the Macintosh and PC environments. In addition, Windows 95 is provided so that you can install a basic operating system for the PC environment.

IMPORTANT If you received this manual with your new computer, the PC Compatibility Card software is already installed. In addition, a PC container with Windows 95 and the necessary PC utilities and support software has also been installed. Refer to this chapter if you need to reinstall the PC Compatibility Card software, create a new drive container, reinstall Windows 95, or reinstall PC utilities.

To install the software, you need the following items that came with your PC Compatibility Card:

- *PC Compatibility Card–Mac OS Software CD*
- *PC Compatibility Card–PC Utilities CD*
- *Microsoft Windows 95 CD-ROM Setup Boot Disk*
- *Microsoft Windows 95 CD*

Note: Your PC Compatibility card came with two different Windows 95 CDs. Make sure to use the CD labeled *Microsoft Windows 95* and not the one labeled *Microsoft Windows 95 Starts Here/How & Why*.

There are several steps to installing your PC Compatibility Card software:

- installing the Mac OS software
- creating a storage area (called a *drive container*) for your PC software
- installing Windows 95
- installing support software for Windows 95
- installing PC utilities

Installing the Mac OS PC Compatibility software

To install the Mac OS software for operating your PC Compatibility Card, follow these steps:

- 1 Insert the *PC Compatibility Card–Mac OS Software CD* into the CD-ROM drive.**

If necessary, double-click the CD icon to open it.

- 2 Double-click the **PC Compatibility Software** folder to open it.**

- 3 Double-click the **Installer** icon in the **PC Compatibility Software** folder.**

If you see a message describing the Installer software, click OK.

The Installer window appears.

- 4 Make sure the disk named in the box is the one on which you want to install software.**

If not, click Switch Disk until the correct disk name appears.

Note: If you want to install only specific components, choose Custom Install from the Easy Install menu. In the Custom Install window, click to place an X in the boxes next to the components you want to install.

- 5 Click **Install**.**

The software is automatically installed on your hard disk.

- 6 When the installation is complete, follow the instructions on the screen to quit the Installer and restart your computer.**

The following Mac OS software is now installed for use with your PC Compatibility Card:

Name	Location
PC Setup	Control Panels folder
Ethernet (built-in)	Extensions folder
PC Compatibility Guide	Extensions folder
PC Clipboard	Extensions folder
PC Net Exchange	Extensions folder
PC Network Extension	Extensions folder
PC Print Spooler	Extensions folder
PC Setup Switch	Control Strip Modules

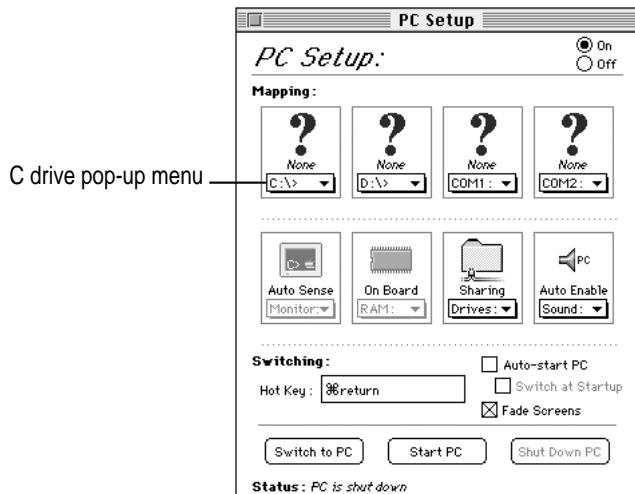
Creating a drive container

A drive container is a file on your computer's hard disk that acts as a hard drive for the PC. You create a drive container using the PC Setup control panel.

- 1 Choose Control Panels from the Apple (apple) menu.**
- 2 Double-click the PC Setup icon.**

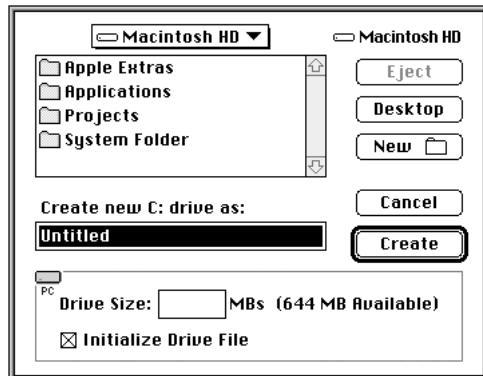


The PC Setup control panel appears.



- 3 If the PC is running click Shut Down PC.**
- 4 Choose New Drive File from the C drive pop-up menu.**

A dialog box appears.



- 5 Choose a location for the drive container.**

The drive container can be on any hard disk attached to the computer that has sufficient free space.

6 Type a name for the drive container and then press the Tab key.

You can type up to 31 characters.

7 Type a size (in MB) for the drive container.

You can make the container as small as 2 MB or as large as 1023 MB. The amount of space you need depends on the software you want to install. If you are installing Microsoft Windows 95, you'll need at least 200 MB.

IMPORTANT Once a drive container is created, its size cannot be changed. Before choosing a size for your drive container, decide which PC operating system and applications you want to run. Check the documentation that came with the software to estimate how much space you'll need; then allow some extra room for applications. If you still run out of space on the drive container, you can create another drive container and assign it to drive D.

8 Make sure Initialize Drive File is checked.

The Initialize Drive File option is used to create a drive container with a single partition. A single-partition drive container is recommended for most standard installations. However, you can create a drive container with multiple partitions. See “Creating a Multiple Partition/Bootable Drive Container” in Chapter 3, “Setting Up the PC Environment,” if you need a drive container with multiple partitions.

9 Click Create.

The new drive container is created.

10 Click Start PC.

Note: If you want the PC to start automatically when the Mac OS starts up, click the box labeled “Auto-start PC” to place an X in it.

Installing Windows 95

Once the drive container is created, the next step is to install the Windows 95 operating system in it. You can think of a new drive container as a formatted hard drive that needs an operating system in order to be a startup disk. You need to install Windows 95 before you can install any applications. Find the *Microsoft Windows 95 CD-ROM Setup Boot Disk* and *Microsoft Windows 95 CD* that came with your PC Compatibility Card and follow these steps:

Note: Your PC Compatibility card came with two different Windows 95 CDs. Make sure to use the CD labeled *Microsoft Windows 95* and not the one labeled *Microsoft Windows 95 Starts Here/How & Why*.

1 Open the PC Setup control panel and click “Switch to PC.”

The Mac OS desktop disappears. (If you set up a dedicated monitor for the PC environment, the image on the Mac OS monitor dims.) The PC environment starts up and you see a message about a Non-System disk or disk error. This message indicates that the PC has started up and not found any operating system.

2 Insert the *Microsoft Windows 95 CD-ROM Setup Boot Disk* into the disk drive.

The *Microsoft Windows 95 CD-ROM Setup Boot Disk* contains the necessary CD-ROM drivers so that the PC Compatibility Card can access the Macintosh CD-ROM drive.

3 Insert the *Microsoft Windows 95 CD* into the CD-ROM drive.

4 Press the Space bar to continue.

5 Follow the onscreen instructions to install Windows 95.

- You need the Windows 95 Certificate of Authenticity number found on the cover of the Windows 95 manual that came with your PC Compatibility Card.
- If you choose to make a startup floppy disk, make sure the disk you are going to use is already formatted for the PC environment. The PC environment will not recognize an unformatted or Macintosh-formatted disk.

- Do not install any networking software during the Windows 95 installation process. To install networking software, see Appendix D, “Installing Network Client Software,” after you have completed the Windows 95 setup process.
- At the end of the installation process, make sure to eject the *Microsoft Windows 95 CD-ROM Setup Boot Disk* by pressing ⌘-E before the computer restarts. If the *Microsoft Windows 95 CD-ROM Setup Boot Disk* is still in the disk drive, the computer will boot from the floppy disk when it restarts.

When the installation process is complete, the PC environment automatically restarts and runs Windows 95.

6 Follow the onscreen instructions to complete the Windows 95 setup.

The first time you run Windows 95 after installation, the Windows 95 setup program automatically starts. Follow the instructions on the screen noting the following items:

- When you are asked to install printer drivers, click Cancel. To set up printing, see Chapter 3, “Setting Up the PC Environment,” after you have completed the Windows 95 setup process.
- Do not print the test page if you are prompted to do so.

Installing support software for Windows 95

The software on the *PC Compatibility Card–PC Utilities* CD that came with your PC Compatibility Card allows the card to work with the Mac OS and Mac OS–compatible CD-ROM drives, networks, and other equipment.

To install the software, follow these steps:

1 If necessary, switch to the PC environment.

To switch to the PC environment from the Mac OS, press $\text{⌘}-\text{R}$, or open the PC Setup control panel and click “Switch to PC.”

2 Insert the *PC Compatibility Card–PC Utilities* CD.

3 Click the Start button; then choose Run from the menu that appears.

4 In the dialog box that appears, type the following:

```
E:\APPLE\SETUP <return>
```

5 Follow the instructions that appear on the screen.

The recommended directory in which to install files is C:\APPLE.

By default, all options will be installed. However, you may choose not to install specific options. These are the installation options:

- *Install Macintosh/Windows Copy and Paste:* allows you to transfer Clipboard information between the Mac OS and PC environments
- *Install Macintosh/PC Folder Sharing:* allows you to use a Mac OS folder with the PC as a shared PC drive
- *Install CD-ROM Support:* allows you to use CD-ROM discs in the PC environment
- *Install PC Compatibility Help:* helps you set up your Windows 95 environment to properly work with the PC Compatibility Card

6 When installation is complete, restart the PC.

Click the Start button and select Shutdown. In the Shutdown dialog box, choose “Restart the Computer?”



Configuring network support in Windows

To configure network support in Windows, see Appendix D, “Installing Network Client Software.”

Installing PC utilities

The *PC Compatibility Card–PC Utilities* CD also contains the following programs and utilities:

- Keyboard files let you use keyboard layouts for a variety of languages.
- QuickTime for Windows lets you view and manipulate video on the PC.
- Sound Blaster software lets you play music and manipulate sound files.
- Video drivers let you configure and use a variety of monitors.

You should install Sound Blaster and the video drivers. QuickTime and the keyboard files are optional.

Installing keyboard files in Windows 95

Keyboard files allow you to use keyboard layouts for other languages and keyboards.

IMPORTANT If you are using an international keyboard, be sure to install and use the keyboard files on the *PC Compatibility Card–PC Utilities CD*. (The supported languages vary from country to country.) The keyboard files that come with Windows 95 may not work with your keyboard.

- 1 Start Windows 95.
- 2 Insert the *PC Compatibility Card–PC Utilities CD* into the CD-ROM drive.
- 3 Click the Start button.
- 4 Choose Settings from the menu that appears; then choose Control Panel.
- 5 Double-click the Keyboard icon.



- 6 Click the Language tab.
- 7 Click Add.
- 8 From the pop-up list that appears, select the language you want. Then click OK.
- 9 Select the name of the language whose keyboard layout you want to use and then click OK.
- 10 Click “Set as Default” and then click OK.
- 11 When requested to insert the Windows 95 CD, leave the *PC Compatibility Card–PC Utilities CD* in the CD-ROM drive and click OK.

You can only use the keyboard drivers provided on the *PC Compatibility Card–PC Utilities CD*.
- 12 If an error message appears, click OK.
- 13 Click Browse.

- 14** Select the E drive in the Drives window.
- 15** In the Folders window, click the folder and file you want. Then click OK.

The keyboard files are located in the following directory:

E:\KEYBOARD\WIN95

Installing QuickTime for Windows 95

Follow these steps to install the QuickTime for Windows 95 software:

- 1** In the PC environment, insert the *PC Compatibility Card–PC Utilities CD* into the CD-ROM drive.
- 2** In Windows 95, click the Start button.
- 3** Choose Run from the menu that appears.
- 4** In the dialog box that appears, type the following:
E:\QUICKTME\QT32INST <return>
- 5** Follow the instructions that appear on your screen to complete the installation.

Installing Sound Blaster software for Windows 95

- 1** In the PC environment, insert the *PC Compatibility Card–PC Utilities CD* into the CD-ROM drive.
- 2** In Windows 95, click the Start button.
- 3** Choose Run from the menu that appears.
- 4** In the dialog box that appears, type the following:
E:\SOUND\W95SETUP.BAT <return>

If a message asks you to insert a disk, click OK.

Let the setup program modify your .INI file.

- 5** When the Installer asks if you want to reboot the PC, choose No.
- 6** When the installation is complete, quit and restart Windows 95.

To use the Sound Blaster programs in Windows 95, click Start, choose Programs, and select the Sound Blaster 16 directory.

Installing video software for Windows 95

The Windows 95 display driver that comes with the PC Compatibility Card offers better performance than the standard driver. To install the driver, follow these steps:

- 1 Insert the *PC Compatibility Card–PC Utilities CD* into the CD-ROM drive.
- 2 In Windows 95, click the Start button.
- 3 Choose Run from the menu that appears.
- 4 In the dialog box that appears, type the following:
`E:\VIDEO\ATISETUP <return>`
- 5 Click Display Driver.
- 6 Follow the onscreen instructions to complete the installation.

IMPORTANT The ATI setup program asks you to type `D:\WIN95` to specify the video driver location. Because you are using the *PC Compatibility Card–PC Utilities CD* rather than the *Microsoft Windows 95 CD*, type `E:\VIDEO\WIN95` instead.

You may need to move windows to see the information presented. To move a window, drag the window's top bar. To set up your monitor for use in Windows 95, see Chapter 3, “Setting Up the PC Environment,” after you have completed the Windows 95 setup process.

Installing your own PC software

You can now install your own PC programs in the drive container you've created. Follow the instructions that came with the programs.

You may need to eject disks during installation. Press `⌘-E` to eject a floppy disk. Press `⌘-Y` to eject a CD. For more information on working with disks, see “Using Floppy Disk Drives and Floppy Disks” and “Using CD-ROM Discs and Drives” in Chapter 4, “Working in the PC Environment.”

For further information on installing network client software, see Appendix D, “Installing Network Client Software.”

3

Setting Up the PC Environment

This chapter contains information on the following aspects of your PC environment:

- the PC Setup control panel and Control Strip module
- monitors and video software
- RAM
- printer settings
- sound options
- PC drives
- shared volumes
- network settings
- serial port settings
- modem settings
- joystick and MIDI devices
- DOS configuration files

About the PC Setup control panel

You can control the following PC options in the PC Setup control panel:

- turning the PC Compatibility Card on and off
- assigning PC drives to drive containers or volumes
- assigning PC COM1 and COM2 ports to Macintosh serial ports or text files
- setting up shared folders and volumes
- turning PC sound on and off
- changing the command (hot key) that switches between environments
- setting the PC to start automatically when you start up your computer
- switching to the PC automatically when you start up your computer
- setting the fade screen option when switching environments
- switching to, starting, and shutting down the PC

These options are described in this chapter and in Chapter 4, “Working in the PC Environment.”

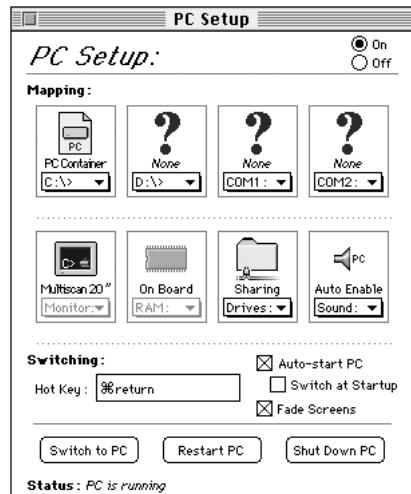
To use the PC Setup control panel, follow these steps:

- 1 Choose Control Panels from the Apple (apple) menu.
- 2 Double-click the PC Setup icon to open the PC Setup control panel.



3 When you have specified the settings you want, close the control panel.

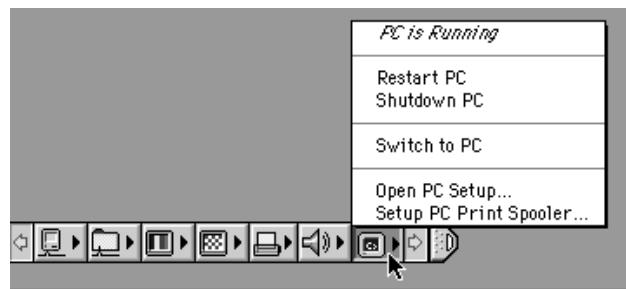
Onscreen help: To see brief explanations of items in the control panel, choose Show Balloons from the Guide (?) menu. For detailed step-by-step help, see the PC Compatibility Guide, available in the Guide (?) menu.



Using the PC Setup Control Strip module

As part of the installation process, a PC Setup module is added to your Control Strip. From this Control Strip module you can do the following:

- start up the PC or restart the PC
- shut down the PC
- switch to the PC
- open the PC Setup control panel
- set up the PC Print Spooler



For more information on using the Control Strip, see “How do I use the Control Strip?” in the “Customizing Your Computer” topic area of Mac OS Guide, available in the Guide (?) menu.

Configuring monitors

To connect a monitor, see Chapter 1, “Connecting Monitors and Other Equipment.”

In most cases, the Mac OS recognizes the monitor you’re using to display the PC environment. The monitor type appears in the Monitor section of the PC Setup control panel.

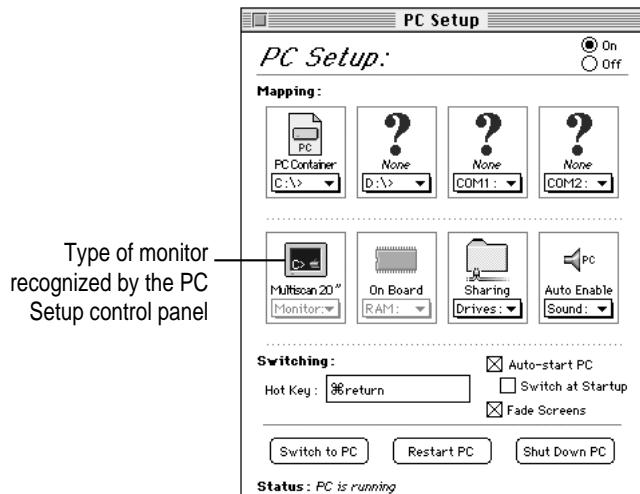
If the monitor you’re using to display the PC environment is not working correctly, make sure you have connected the monitor according to the instructions in Chapter 1, “Connecting Monitors and Other Equipment,” and make sure you have installed and configured the video software as described in Chapter 2, “Installing the PC Compatibility Card Software.” For additional information on video settings, see Appendix E, “Configuring Video Software,” and Chapter 5, “Troubleshooting.”

If a VGA monitor is not working correctly, also check whether your VGA-to-Macintosh adapter is configurable and verify the correct settings.

Selecting and configuring monitors in Windows 95

- 1 In the Mac OS, open the PC Setup control panel, and make a note of the monitor type that appears in the Monitor section of the control panel.

You can switch to the Mac OS by typing $\text{⌘}-\text{Return}$.



- 2 Switch to the PC environment and make sure Windows 95 is running.

You can switch to the PC environment by clicking "Switch to PC" in the PC Setup control panel or by pressing $\text{⌘}-\text{Return}$.

- 3 In Windows 95, click the Start button.
- 4 Choose Settings from the menu that appears; then choose Control Panel.
- 5 Double-click the Display icon to open the Display control panel.



- 6 Click the Settings tab in the Display control panel.

Note: If you have a DDC-compliant monitor (such as an AppleVision display) connected directly to the video port on the PC Compatibility Card, you do not need to select a monitor type. Windows 95 will make the appropriate settings for you. In addition, Windows 95 will configure the Display control panel so that only the settings that work with your monitor appear. Skip ahead to step 13.

- 7** Click Advanced Properties.
- 8** Click the Monitor tab and then click Change.
- 9** If your monitor is listed in the dialog box that appears, click its name, click OK, and then go to step 13. If not, click "Have Disk" and go on to step 10.
- 10** Insert the *PC Compatibility Card–PC Utilities* CD. Make sure the path in the text box is E:\APPLE; then click OK.
- 11** Click Show All Devices.
- 12** In the Models box, choose a model corresponding to the monitor type listed in the PC Setup control panel. Then click OK.

If this type is listed in PC Setup...	...choose this type in the Models box
Apple 14" (this type appears if you've connected a 12-, 13-, or 14-inch fixed-frequency monitor)	"(all other Apple monitors)"
Apple 16"	"(all other Apple monitors)"
Multiscan (this type appears if you've connected an AppleVision or other DDC-compliant monitor)	Plug and Play Monitor (VESA DDC) if this type is automatically selected in the list. Otherwise, AppleVision 1710AV, AppleVision 1710, AppleVision 1705, Multiple Scan 1705, or Multiple Scan 20.
Multiscan 14"	Apple Multiple Scan 14" or Apple Multiple Scan 15"
Multiscan 17"	Apple Multiple Scan 17"
Multiscan 20"	Apple Multiple Scan 20"
19" Color	Your monitor model (if listed), or SuperVGA 1024 x 768
Portrait	"(all other Apple monitors)"
21" Color	"(all other Apple monitors)"
21" Monochrome	"(all other Apple monitors)"
VGA	Standard VGA 640 x 480

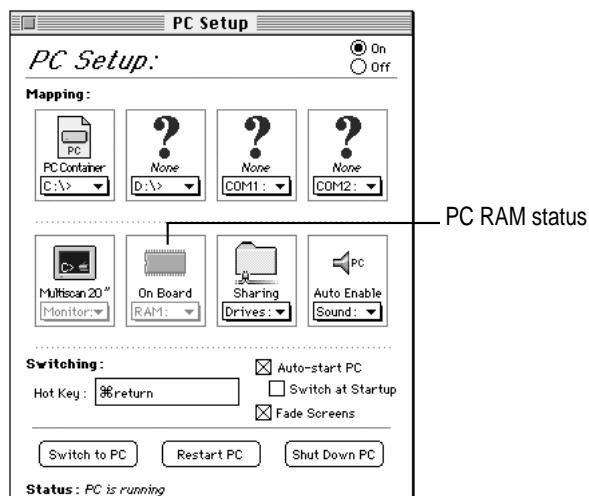
To customize a multiple-scan monitor, click the Adjustments tab in the Display control panel.

13 **Restart Windows.**

A help window appears with information on the video software. When you're finished with the help window, click to remove the X from the box at the bottom of the window, so it won't appear each time you start up.

RAM information

The RAM portion of the PC Setup control panel shows where RAM is installed on your PC Compatibility Card. If a DIMM (dual inline memory module) is installed, the word "DIMM" appears in the box. If no DIMM is installed, the words "On Board" appear in the box.



For more information on adding memory to your PC Compatibility Card, see Appendix C, "Adding Memory to Your PC Compatibility Card."

Setting printer options

From the PC environment, you can print on most printers connected to the Mac OS-compatible serial port or network connection, using the PC Print Spooler software.

Note: The PowerPoint package by GDT Softworks lets you use a PC-compatible parallel-port printer with your computer. For more information, you can phone GDT at 800-663-6222 or 604-473-3600, or visit their World Wide Web site at <http://www.gdt.com>.

Setting up printing in the Mac OS

To print from the PC environment on a printer connected to the computer's printer port or other network connection, you need to select a printer in the Mac OS Chooser and set up the PC Print Spooler software. Follow these steps; then go to "Setting Up Printing in the PC Environment," later in this section.

Note: If you are printing from the PC environment using the optional PC Serial and Parallel Card, see the manual that came with that card for instructions on how to print from the PC environment.

- 1 In the Mac OS environment, open the Chooser in the Apple (Macintosh icon) menu and make sure a printer is selected.**

If you are using a PostScript™ printer, be sure to select the LaserWriter 8 driver. For more information on selecting a printer, see the documentation or onscreen help that came with your computer.

- 2 Open the Extensions folder inside the System Folder.**

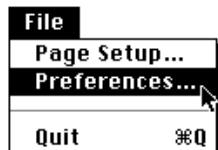
Note: You can also open the PC Print Spooler from the PC Setup Control Strip module, then skip ahead to step 5.



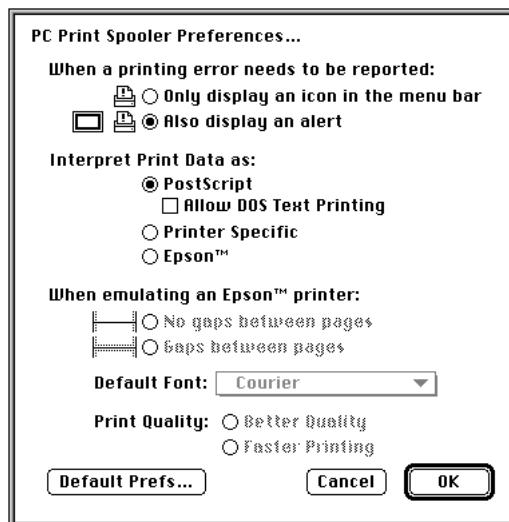
- 3 Open the PC Print Spooler icon.



- 4 Choose Preferences from the File menu.



- 5 Select how you want to be notified of printing errors.



6 Choose an option under “Interpret Print Data as.”

Printing data sent from the PC environment has to be interpreted by the Mac OS before it can be sent to the printer. The PC Print Spooler provides three ways to interpret printing information from the PC environment.

Note: If you are unsure what printing option to use, select Epson. Epson emulation is a generic option that works with most printers.

- Select PostScript if your printer supports PostScript. If you plan to print non-PostScript files on a PostScript printer (for example, if you print files from the DOS prompt), make sure the checkbox labeled “Allow DOS Text Printing” has an X in it.
- If you have a PC parallel-port printer and you are using the PowerPoint package by GDT Softworks, select Printer Specific. You will only be able to select this option if you have selected a PowerPoint printer in the Chooser.
- Choose Epson if you are using a non-PostScript printer (such as the Apple StyleWriter, Apple LaserWriter 300, and certain HP DeskJet models).

For more information about the Epson options, see the next section, “Epson Emulation and Page Setup Options.”

7 Click OK.

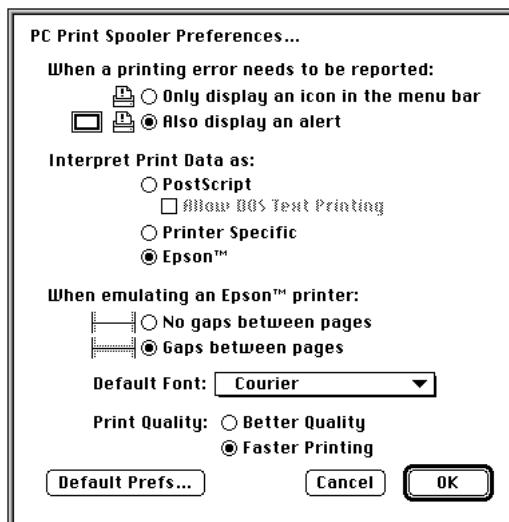
8 Choose Quit from the File menu to exit the Print Spooler application.

Epson emulation and page setup options

If you chose Epson in the Print Spooler Preferences dialog box, you can make the following settings:

- Select “Gaps between pages” if the application you are printing from does not allow a 1/2-inch margin at the top and bottom of the page (such as the DOS prompt or Windows 95 Notepad). Selecting “Gaps between pages” adds a 1/2-inch margin to the top and bottom of the document. This extra margin will be in addition to whatever margin is currently set. Choose “No gaps between pages” if the application you are printing from can format the page to have at least a 1/2-inch margin at the top and bottom of the page.

- The font in the Default Font box is used when you're printing ASCII text from DOS and when the Faster Printing option is selected. For best results, use a fixed-space font such as Courier or Monaco. Using a proportional font such as Times® may change your document's formatting.
- Select Faster Printing when you want to quickly print text from a DOS application. When this option is selected, printers that use less than 300-dpi resolution (such as ImageWriter dot-matrix printers) will print in 72-dpi resolution.
- Select Better Quality if you want Epson printer fonts in your document to be translated to corresponding Macintosh TrueType fonts. Because Epson printer fonts are fixed-space fonts, the TrueType font will be scaled to behave like a fixed-space font. Printers that use less than 300-dpi resolution will print in 144-dpi resolution.



For best results, use Epson printer fonts that map to a fixed-space TrueType font, or use graphical fonts supplied by your DOS application. The following table lists some Epson printer fonts and the TrueType fonts they are translated to if Better Quality is selected:

Epson font	TrueType font
Roman	Times (proportional)
SanSerif	Helvetica® (proportional)
Prestige	Palatino® (proportional)
Courier	Courier (fixed)
OCR-A, OCR-B	Monaco (fixed)
Script, Script C,	Monaco (fixed)
Orator, Orator S	Monaco (fixed)

To print legal-size and other size paper from the PC with Epson emulation, follow these steps:

- 1 Open the PC Print Spooler.**
- 2 Choose Page Setup from the File menu.**



The Page Setup dialog box for the printer currently selected appears.

3 Select the desired page size and click OK.

Any attributes you set in the Page Setup dialog box within the PC Print Spooler will remain in effect until you reset them or select the Default Prefs button in the Preferences dialog box.

IMPORTANT You must set the page size in the DOS or Windows application you are printing from to the same size you selected in the Page Setup dialog box in PC Print Spooler. If you do not do this, your documents may not print properly.

Note: This feature is only available for Epson emulation printing. For PostScript and printer-specific printing, set the page attributes within the DOS or Windows application you are printing from. If “Allow DOS Text Printing” is selected for PostScript printers, you can adjust the page attributes for a PostScript printer, but these settings will only take effect when you are printing from the DOS prompt or a DOS application that does not send PostScript to the printer.

Resetting the default printing preferences

- 1 Open the PC Print Spooler.**
- 2 Choose Preferences from the File menu.**
- 3 Click Default Prefs to restore the default settings in the Preferences dialog box.**

This sets the printing option to PostScript, sets the default font to Courier, and resets the page setup attributes to their default state (as defined by the printer driver selected in the Chooser).

Printing problems

If there is a printing problem, the file you’re trying to print is moved to the Spooler Rejected folder (in the Preferences folder inside the System Folder). This might happen if, for example, you try to print a PostScript file with Epson selected in the PC Print Spooler Preferences.

After setting your preferences correctly, you can print the file automatically by moving the PC Spooler file from the Spooler Rejected folder to the Spooler folder. Or you can try switching to the PC environment and printing again.

Setting up printing in the PC environment

This section includes basic information you need to set up your printer drivers in the PC environment. For more detailed information, refer to the documentation that came with your software and printer.

Note: If you are printing from the PC environment using the optional PC Serial and Parallel Card, see the manual that came with that card for instructions on how to print from the PC environment.

IMPORTANT Some printer models support more than one printer language and may provide separate printer drivers for each language. If you are using the PostScript printing option, be sure to choose the printer driver that supports PostScript; otherwise, printing may not work properly.

Setting up printing in Windows 95

Before you print from Windows 95 for the first time (and any time you change printer drivers), follow these steps:

- 1 In Windows 95, click the Start button.
- 2 Choose Settings from the menu that appears, and then choose Printers.

If no printers are installed, see your Windows 95 documentation for instructions on how to add a printer.

- 3 Double-click the printer that you are printing on.
- 4 Choose Properties from the Printer menu.

The properties window for the printer you have selected appears.

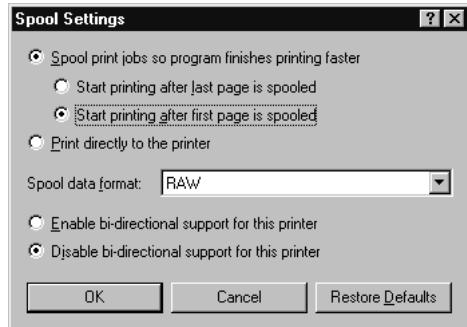
- 5 Click the Details tab.

The Details page appears.

- 6 Click the Spool Settings button.

The Spool Settings dialog box appears.

- 7** Click the button labeled “Disable bi-directional support for this printer.” Then click OK.

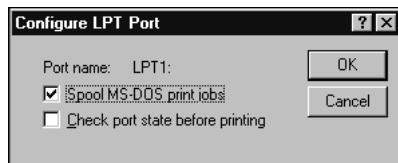


If this button is not available, click OK; then go on to the next step.

- 8** In the Properties window, click Port Settings.

The Configure LPT Port dialog box appears.

- 9** Make sure the checkbox labeled “Check port state before printing” is unchecked. Then click OK.



If you are using a non-Post Script printer, go to step 13. If you are using a PostScript printer, follow these steps:

- 10** In the Properties window, click the PostScript tab.

- 11** Click Advanced.

The Advanced PostScript Options dialog box appears.

- 12** Make sure the checkboxes labeled “Send CTRL+D before Job” and “Send CTRL+D after Job” are unchecked. Then click OK.

13 Close the Properties window.

IMPORTANT When printing on a PostScript printer from the PC environment, be sure to print one file at a time. Printing multiple files may cause a PostScript error. To verify that the file has finished printing, check the Windows 95 Printer queue.

Printing from Windows 95

To print from Windows 95 using a printer connected to the computer printer port or network connection, you need to select a printer driver in Windows 95 that corresponds to the option you selected in the PC Print Spooler Preferences dialog box. If you have not set up the PC Print Spooler, see “Setting Up Printing in the Mac OS,” earlier in this chapter.

- If you have a PostScript printer (and have selected the PostScript option in the PC Print Spooler Preferences dialog box), install and select the PostScript version of the Windows 95 driver that came with your printer. If you don't have a Windows driver specifically for your printer, you can select another PostScript printer driver, such as one of the following:
 - LaserWriter Pro 630, if you have a PostScript Level 2 printer (preferred)
 - Apple LaserWriter II NTX, if you have a PostScript Level 1 printerIf you are not sure whether you have a PostScript Level 1 or Level 2 printer, choose a PostScript Level 1 printer driver. If you select a driver for a PostScript Level 1 printer, you can print on any PostScript printer. If you select a driver for a PostScript Level 2 printer, you can print only on printers that support PostScript Level 2.
- If you have a PC parallel-port printer and you are using the PowerPoint package by GDT Softworks (and have selected the Printer Specific option in the PC Print Spooler Preferences dialog box), select the driver for the printer connected to the computer using the PowerPoint cable.

- If you are using a non-PostScript printer (and have selected the Epson option in the PC Print Spooler Preferences dialog box), select one of the following drivers:
 - Epson AP-3260 for 360-dpi color printing (preferred driver)
 - Epson AP-3250 for 360-dpi black-and-white printing
 - Epson Color Stylus for 360-dpi color printing
 - Epson LQ-2500 for 180-dpi color printing
- If none of the drivers listed above is available, try one of the following:
- Epson LQ-2550/LQ-1050/LQ-1010
 - Epson Action Printer 4500/ActionPrinter 4000

Note: The Epson Color Stylus printer is capable of 720 x 360-dpi printing. However, the PC Compatibility Card software currently supports a maximum resolution of 360 x 360 dpi. Please verify the maximum resolution in the application you are printing from, or improper printing may occur.

Saving a printer file

To save a printer file such as a PostScript file in the PC environment, use the option in your Windows printer driver to print to a file. Do not assign a PC COM port to a text file in the PC Setup control panel and print to that port in the PC environment.

Configuring PC sound

You can use three kinds of sound in the PC environment:

- **PC beep sounds**
- **CD sound** You can play and control audio CDs in the PC environment.
- **Sound Blaster sound** You can hear Sound Blaster sound in games and other programs, and you can use Sound Blaster-compatible utilities to manipulate sound files. You can also record sound from audio CDs in the PC environment. For more information about Sound Blaster capabilities, see the PC Sound manual that came with your PC Compatibility Card.

You can hear sound from the PC environment through the computer speaker, headphones, or speakers built into your monitor.

The Mac OS treats all PC sound as if it were coming from the internal CD-ROM drive. You can still use the internal CD-ROM drive to play CDs and CD-ROM discs in the Mac OS.

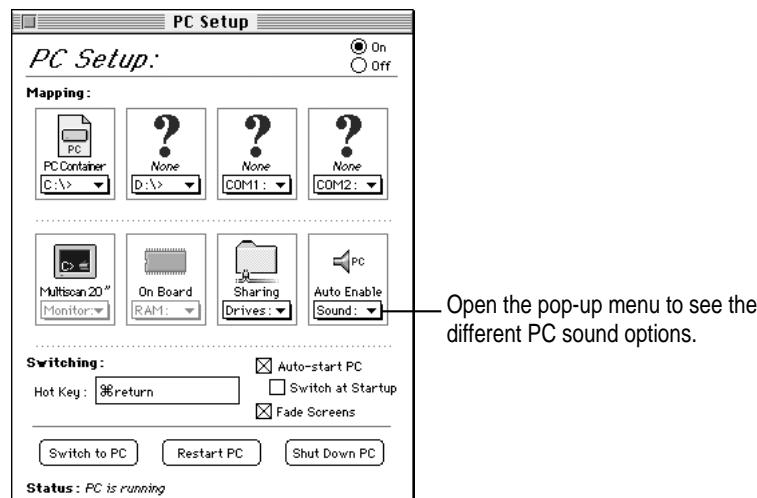
Note: Microphone and line input are not supported by the PC Compatibility Card.

Turning PC sound on and off

To hear PC sound, you need to turn on sound for the PC by following these steps.

Note: Before you begin, make sure that sound is turned on (not muted) in the Mac OS.

- 1 Open the PC Setup control panel.**
- 2 Choose an option from the Sound pop-up menu.**



You can choose the following options:

- To hear PC sounds in both environments, choose Enabled.
- To hear PC sounds only in the PC environment, choose Auto Enable.
- To shut off PC sounds, choose Disabled.

- 3 Close the PC Setup control panel.**

Configuring PC drives

To work in the PC environment, you need to tell the PC Compatibility Card where PC software and files are stored. You do this by assigning PC drive letters to storage areas using the PC Setup control panel. You can assign drive C or D to a PC-formatted SCSI hard drive attached to your Macintosh, or to a drive container—a file you create on a Macintosh hard disk that acts as a virtual PC drive. You can also use a drive container created by SoftPC or SoftWindows™; however, that drive container cannot be bootable.

Note: A hard drive or drive container only boots when assigned to drive C in the PC Setup control panel.

IMPORTANT If you received this manual with your new computer, a PC drive container with Windows 95 has already been created on your hard drive and assigned to Drive C in the PC Setup control panel. Follow the steps in this section if you need to create additional drive containers. For information on creating a new drive container with the necessary software, see Chapter 2, “Installing the PC Compatibility Card Software.”

Creating a single partition/bootable drive container

To create a single partition/bootable drive container for drive C or D, follow these steps:

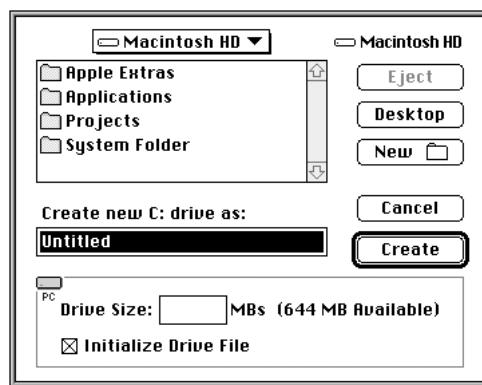
- 1 In the Mac OS, open the PC Setup control panel.
- 2 If the PC is running, click Shut Down PC.
- 3 Choose New Drive File from the C: or D: pop-up menu.
- 4 In the dialog box that appears, choose a location for the drive container.
- 5 Type a name and a size for the container.

You can make the container as small as 2 MB or as large as 1023 MB. The amount of space you need depends on the software you want to install. If you are installing DOS and a few small applications, you'll need about 100 MB. If you are installing Microsoft Windows, you'll need at least 150 MB. If you are installing Microsoft Windows 95, you'll need at least 200 MB.

IMPORTANT Once a drive container is created, its size cannot be changed. Before choosing a size for your drive container, decide which PC operating system and applications you want to run. Check the documentation that came with the software to estimate how much space you'll need; then allow some extra room for applications. If you still run out of space on the drive container, you can create another drive container and assign it to another drive.

- 6 To format the drive container with a single partition, make sure the Initialize Drive File box is checked.

When this box is checked, PC Setup will initialize the container for you.



- 7 Click Create.

The time that it takes to create a drive container depends on the size of the container.

Creating a multiple partition/bootable drive container

IMPORTANT Apple does not recommend the use of multiple partition/non-bootable drive containers with the PC Compatibility Card.

To create a multiple partition/bootable drive container for drive C or D, follow these steps:

- 1 In the Mac OS, open the PC Setup control panel.
- 2 If the PC is running, click Shut Down PC.

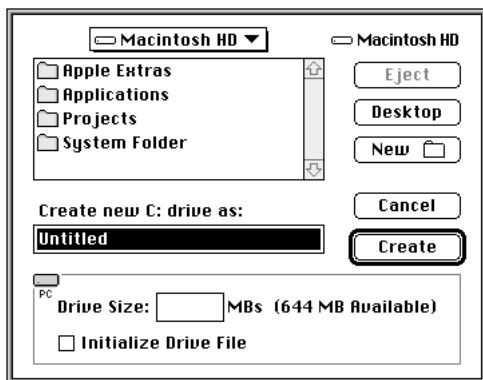
- 3** Choose New Drive File from the C: or D: pop-up menu.
- 4** In the dialog box that appears, choose a location for the drive container.
- 5** Type a name and a size for the container.

You can make the container as small as 2 MB or as large as 1023 MB. The amount of space you need depends on the software you want to install. If you are installing DOS and a few small applications, you'll need about 100 MB. If you are installing Microsoft Windows, you'll need at least 150 MB. If you are installing Microsoft Windows 95, you'll need at least 200 MB.

IMPORTANT Once a drive container is created, its size cannot be changed. Before choosing a size for your drive container, decide which PC operating system and applications you want to run. Check the documentation that came with the software to estimate how much space you'll need; then allow some extra room for additional applications. If you still run out of space on the drive container, you can create another drive container and assign it to another drive.

- 6** To format the drive container with multiple partitions, make sure the Initialize Drive File box is not checked.

When this box is unchecked, PC Setup does not initialize the container for you. You have to do it manually in DOS, as described in step 8.



- 7** Click Create.

The time that it takes to create a drive container depends on the size of the container.

- 8 To format the container with multiple partitions, switch to DOS and prepare the drive using the FDISK and FORMAT commands.**

To make the container bootable, use the /S parameter of the FORMAT command. For example, if you want to format the D drive as a bootable container type, use

```
FORMAT D: /S <return>
```

Use the DOS HELP command for more information.

Assigning a drive to a PC-formatted hard disk

To assign a drive to a PC-formatted hard disk connected to your Macintosh SCSI port or SCSI chain, first assign the drive letter to the hard disk. Then make sure the hard disk driver is not being loaded by PC Exchange. To do so, follow the steps below.

IMPORTANT If you use a dedicated PC-formatted partition or SCSI device instead of a drive container, you may experience some disk read/write errors. Apple recommends using drive containers on Macintosh-formatted partitions or SCSI devices as your primary method of data storage.

- 1 Open the PC Setup control panel.**
- 2 Choose Drive Partition from the C: or D: pop-up menu.**
- 3 In the dialog box that appears, select the hard disk drive you want to assign.**
- 4 Open the PC Exchange control panel.**
- 5 Click the Options button.**
- 6 Make sure the SCSI driver for the PC drive is not checked. Then click OK.**

To make the drive bootable, switch to DOS and use the FORMAT command with the /S parameter. See the DOS HELP command for more information.

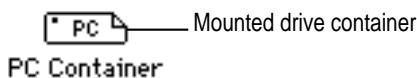
IMPORTANT You cannot boot from a locked PC container, a PC container that is open on your desktop, or a PC container that is on a write-protected file server. Also, you may not be able to mount a locked PC container if file sharing is turned on. You can correct the problem by either unlocking the PC container or turning off file sharing.

Changing a drive assignment

To change the container or partition assigned to the C or D drive, follow these steps:

- 1 Open the PC Setup control panel.
- 2 To assign a new drive container, choose Other Drive File from the C: or D: pop-up menu.
To assign a PC-formatted hard disk (or partition), choose Drive Partition.
- 3 In the dialog box that appears, locate the container or partition you want to assign.
- 4 Make sure the item is not being used as a disk drive in the Mac OS environment.

If a mounted PC drive container icon appears on the desktop, drag it to the Trash to unmount it.



- 5 Click Restart PC.

IMPORTANT If you want to make your PC drive available to the Mac OS, do not use a PC compression program. The Mac OS cannot mount compressed drives.

Using shared volumes

You can set up a Mac OS folder, hard disk, or network volume to act as a PC drive.

Sharing a folder is a convenient way to transfer files between the Mac OS and the PC environment. Sharing is also useful for network volumes and other volumes that otherwise would not be readily available to the PC environment.

Note: Do not set up a floppy disk as a shared folder. This can cause unpredictable results.

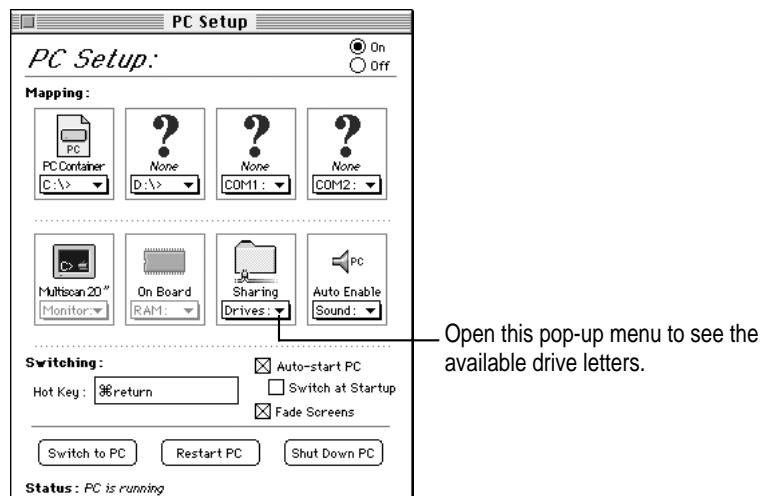
Note: DOS treats all shared volumes as if they were on a network. Some DOS commands, such as FORMAT, CHKDSK, UNDELETE, and SUBST, do not work on these shared volumes.

Sharing files between the Mac OS and the PC

To set up a shared volume, follow these steps:

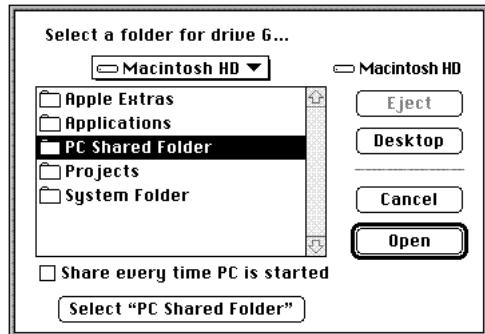
- 1 If the PC is not already running, open the PC Setup control panel and click Start PC.
- 2 In the PC Setup control panel, open the Sharing pop-up menu and choose an available drive letter.

If no drive letters appear, switch to the PC, open the CONFIG.SYS file, and make sure that both a LASTDRIVE statement appears and sufficient available drive letters are assigned. See “Setting Up Your DOS Configuration Files,” later in this chapter.



3 In the dialog box that appears, select a folder or disk you want to share.

You can share a Mac OS folder, hard disk, CD-ROM discs, or shared disk. You cannot share floppy disks.



Note: When you name a folder in the Mac OS environment that you intend to share with the PC environment, you may want the name to be compatible with DOS 8.3 filename guidelines. Otherwise, the sharing software will truncate and translate the name to fit the guidelines. For more information about naming files, see your DOS manual.

4 To automatically share this item whenever you start up the PC, click the box labeled “Share every time PC is started.”

Automatically shared items are underlined in the Sharing pop-up menu.

For more information on transferring files between the PC environment and the Mac OS, see “Using Floppy Disk Drives and Floppy Disks,” “Copying and Pasting Information Between the Mac OS and Windows Environments,” and “Using Shared Folders and Volumes” in Chapter 4. Also see the PC Compatibility Guide, available in the Guide (?) menu.

Note: When you add or remove a shared folder in Windows 95, the view in the “My Computer” section does not immediately change. You need to refresh the view once to update the Shared Folder status.

Turning off volume sharing

If you no longer want to share a volume, follow these steps:

- 1 In the Mac OS environment, open the PC Setup control panel.**
- 2 Open the Sharing pop-up menu and choose the name of the volume you want to stop sharing.**

A warning message appears telling you that the item will no longer be available. Click OK.

Turning off automatic sharing

- 1 In the Mac OS environment, open the PC Setup control panel.**
- 2 Open the Sharing pop-up menu and choose the name of the volume you no longer want to share automatically.**

Automatically shared items are underlined in the Sharing pop-up menu.

Setting up your PC on a network

Your PC Compatibility Card supports most networking protocols, operating systems, and application programs that are compatible with the following network drivers: Novell's Open Data-Link Interface specification (ODI) or Microsoft's Network Driver Interface Specification (NDIS) version 2.0.

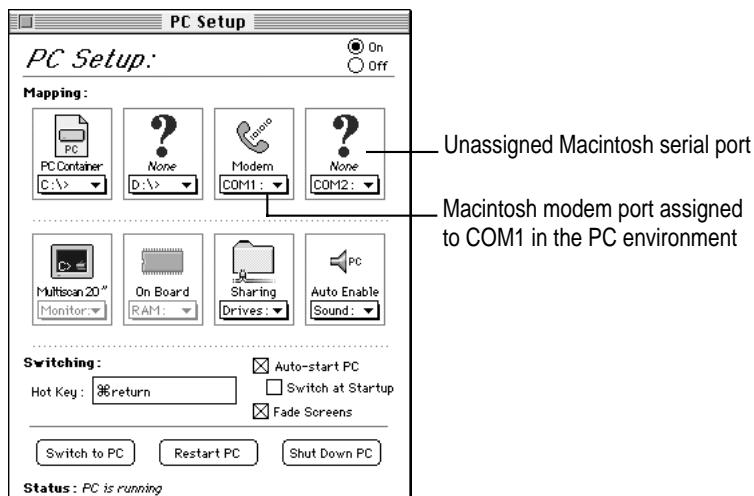
WARNING You must run SETNET every time you add or remove a network protocol, install or upgrade network software, or change anything in the network control panel. If you do not run SETNET, you will experience network problems.

To set up networking, you need to acquire and install networking client software in the PC environment. For more information, see Appendix D, "Installing Network Client Software."

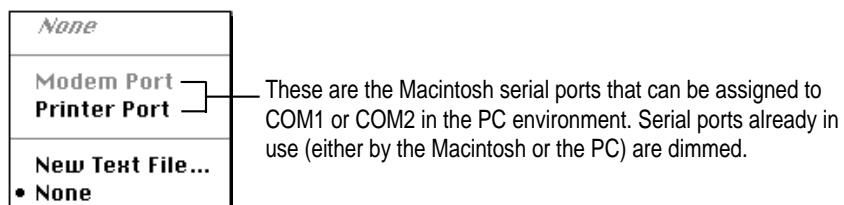
Configuring the PC serial ports

Your PC Compatibility Card supports two serial ports, COM1 and COM2. You can assign these ports to Macintosh serial ports (such as the printer or modem port) or to a text file for later processing. Or you can leave the ports unassigned.

Note: If you are using the optional PC Serial and Parallel Card to connect a printer, modem, or other device to the PC environment, you do not need to configure the Macintosh serial ports. See the manual that came with the PC Serial and Parallel Port card for additional information.



To assign a PC COM port, open the PC Setup control panel and choose a setting in the COM1 or COM2 pop-up menu.



IMPORTANT Mac OS programs cannot access a port that you've assigned to the PC environment. If you're trying to print, fax, or use your modem in the Mac OS environment, and you get a warning message that the port requested is busy or in use, then you need to unassign a PC COM port in the PC Setup control panel.

Setting up a modem or other serial device

From the PC environment, you can use a modem or other serial device connected to the Macintosh serial port. For best results, use the Apple DB-25 DIN-8 Mac to High-Speed Modem cable (part number M5537LL/A). If you are unable to obtain this modem cable, you can use the information in the next section to build a custom cable.

Because the Macintosh uses the RS-422 protocol, the RS-232 Ring Indicator (RI), Request to Send (RTS), and Data Set Ready (DSR) signals are not available through a Macintosh serial port. You can attempt to configure your application to use the carrier string or ignore carrier detect.

Note: The serial port on the optional PC Serial and Parallel Port card (not included) supports the RS-232 interface directly without your having to use a special cable or configure your software.

Note: For more information on setting up a modem in Windows 95 to use TCP/IP for PPP (point-to-point protocol) connections, see Appendix D, "Installing Network Client Software."

Building a custom cable

The following chart lists the signals present on the Macintosh Mini DIN-8 serial connector and the pins that carry these signals on PC-style DB-9 and DB-25 connectors. You can use this information to build a custom cable to connect your PC-compatible serial device to a Macintosh serial port. Refer to the manual for the serial device you want to connect for more information.

Macintosh signal	Macintosh Mini DIN-8	DB-9	DB-25	RS-232 name
HSK _o	1	4	20	DTR
HSK _i	2	8	5	CTS
TXD-	3	3	2	TXD
GND	4	5	7	GND
RXD-	5	2	3	RXD
TXD+	6	N/C	N/C	
GPi	7	1	8	DCD
RXD+	8	5	7	GND

Connecting a joystick

You can connect a game controller to the joystick port on your PC Compatibility Card. For more information, see Chapter 1, “Connecting Monitors and Other Equipment,” and the documentation that came with your joystick.

Connecting a MIDI device

With an optional adapter, you can connect a MIDI device to the joystick port on your PC Compatibility Card. For more information, see Chapter 1, “Connecting Monitors and Other Equipment,” and see the documentation that came with your MIDI device and MIDI adapter.

Setting up your DOS configuration files

When you install the PC Compatibility Card software, it makes all the necessary modifications to your DOS CONFIG.SYS and AUTOEXEC.BAT files. However, there may be times when you want to modify these files. Follow these guidelines:

Editing the CONFIG.SYS file

Your CONFIG.SYS files should include the following statements:

```
DOS=HIGH,UMB  
STACKS=9,256  
DEVICE=C:\DOS\HIMEM.SYS /TESTMEM:OFF  
DEVICE=C:\DOS\EMM386.EXE NOEMS  
LASTDRIVE=M  
DEVICEHIGH=C:\APPLE\CDROM.SYS /D:CDDRVR  
INSTALLHIGH=C:\APPLE\MACSHARE.COM
```

The first line loads DOS into high memory.

If you're using the DOS utility EMM386 and you don't require expanded memory, use all the statements shown above. If you are using EMM386 and you do require expanded memory, remove the following line:

```
DEVICE=C:\DOS\EMM386.EXE NOEMS
```

and replace it with this line:

```
DEVICE=C:\DOS\EMM386.EXE
```

For more information on making the best use of memory, see the information on memory management in the documentation for DOS or for your memory manager.

The last two lines load the CD-ROM drive software and file-sharing software into high memory.

Setting the number of drive letters

You can share folders and volumes with the PC by assigning them to PC drive letters. When you install your PC software, the statement `LASTDRIVE=M` is included in the CONFIG.SYS file. This allows you to view up to nine folders or volumes at once.

To change the number of drive letters, change your CONFIG.SYS file to include the following statement:

```
LASTDRIVE=x
```

where *x* is a letter between F and Z. (The PC reserves drive letters A through E.)

Each drive letter uses 100 bytes of PC memory.

Editing the AUTOEXEC.BAT file

Your AUTOEXEC.BAT file should include the following statements:

```
SET TEMP=C:\TMP
SET TMP=C:\TMP
PATH=C:\DOS
LOADHIGH C:\DOS\MSCDEX.EXE /D:CDDRVR /L:E
LOADHIGH C:\APPLE\APPLEPC
C:\DOS\SMARTDRV.EXE /X
```

The first two lines determine the location for temporary files used by DOS applications.

The LOADHIGH lines load Windows support and CD-ROM software into high memory. The letter “E” at the end of the MSCDEX.EXE line assigns the letter “E” to the CD-ROM drive. You can change it to any unused letter up to the limit specified in the LASTDRIVE line in your CONFIG.SYS file.

The SMARTDRV line creates a disk cache to speed up DOS disk operations. The /X option disables the write cache, which is the slower but safer option. For best CD-ROM performance, the line containing MSCDEX.EXE must come before the line containing SMARTDRV.EXE.

4

Working in the PC Environment

This chapter describes the software that you use to work in the PC environment, to switch between the Mac OS and PC environments, and to share information between both environments.

This chapter describes the following:

- switching between the Mac OS and PC environments
- turning the PC on and off
- using floppy disk drives and floppy disks
- using CD-ROM discs and drives
- using a pointing device
- using keyboards
- copying and pasting information between Mac OS and Windows environments
- using onscreen help in the PC environment
- using shared folders and volumes
- using PC files in the Mac OS environment

Switching between the Mac OS and PC environments

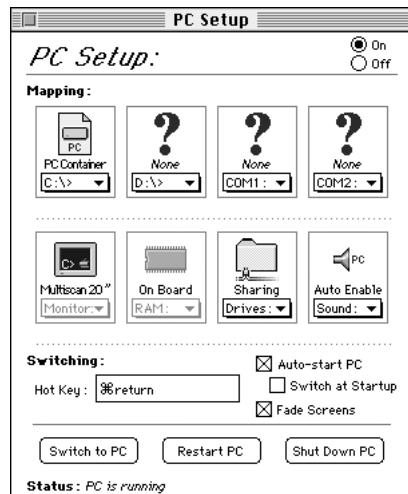
Even though the Mac OS and PC environments are running simultaneously, you can only use one environment at a time. There are three methods you can use to switch between the Mac OS and the PC.

Switching with the PC Setup control panel

- 1 Choose Control Panels from the Apple () menu.
- 2 Double-click the PC Setup icon to open the control panel.



- 3 Click "Switch to PC" to switch to the PC environment.



If you are using a single monitor to display both environments, you can set the screen to fade briefly before switching environments by making sure Fade Screens is checked.

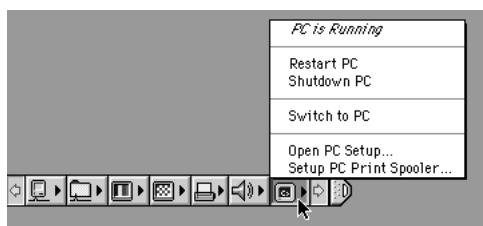
- 4 To switch back to the Mac OS, press ⌘-Return.

Switching with the Control Strip

If you have the Control Strip open in the Mac OS, you can use the PC Setup module to switch to the PC.

With the Control Strip visible, follow these steps:

- 1 Open the pop-up menu in the PC Setup module of the Control Strip and choose “Switch to PC.”



- 2 To switch back to the Mac OS, press ⌘-Return .

Switching with a keyboard command

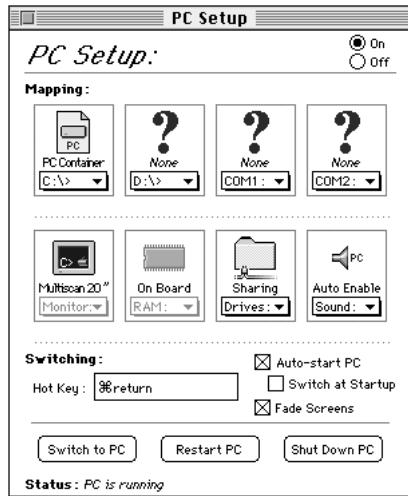
You can set a keyboard command, or hot key, to switch between the Mac OS and PC environments. The default hot key is ⌘-Return .

WARNING If you are rebuilding the desktop in the Mac OS environment, make sure rebuilding is complete before you attempt to switch to the PC environment. If you switch during the rebuilding of the desktop, your system could “freeze.”

Note: If you set a new hot key, it will work in both environments, and ⌘-Return will still work to switch from the PC to the Mac OS. But ⌘-Return will *not* work to switch from the Mac OS to the PC.

To set a new hot key, follow these steps:

- 1 In the Mac OS environment, open the PC Setup control panel.
- 2 Click the Hot Key text box.



- 3 Type the command you want to use to switch environments.

The \# key is automatically included; you type the additional characters you want. For example, you might type Option-Tab, setting the switch command to \# -Option-Tab.

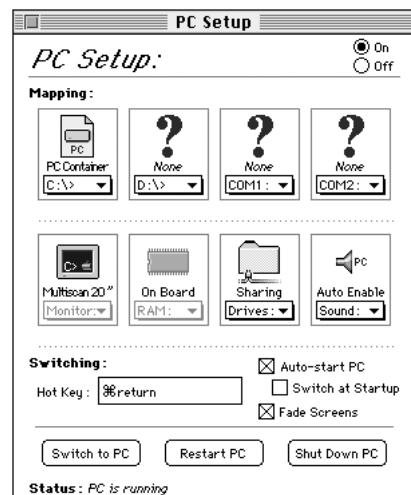
Some character combinations cannot be used. The PC Setup control panel will alert you if you select a reserved key combination.

Turning the PC on and off in the Mac OS environment

WARNING Be sure to shut down Windows 95 before shutting down the PC or Mac OS using either the PC Setup control panel or the Control Strip. If you shut down the PC without shutting down Windows 95, you could lose information or damage your drive container.

Turning the PC on and off with the PC Setup control panel

With the PC Setup control panel open, do one of the following:



- To start the PC if it's shut down, click Start PC in the PC Setup control panel.
If the PC is already running, the button is labeled Restart PC.
- To restart the PC, click Restart PC in the PC Setup control panel.
- To shut down the PC, make sure you have shut down Windows 95. Then click Shut Down PC in the PC Setup control panel.

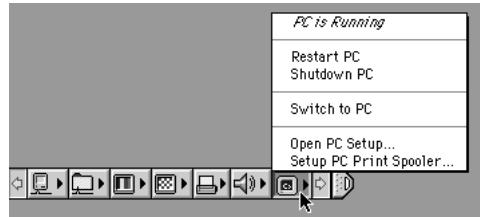
This option turns off the PC until you click Start PC.

- To turn off the PC Compatibility Card entirely, click Off at the top of the PC Setup control panel; then restart the Mac OS.
If you turn off the PC Compatibility Card, you will not be able to switch to the PC environment.
- To turn the PC Compatibility Card on, click On in the PC Setup control panel and restart the Mac OS.

Turning the PC on and off with the Control Strip

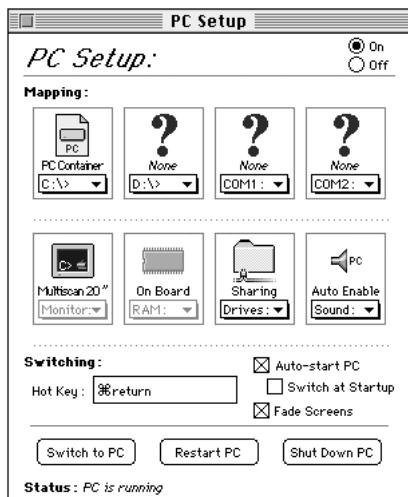
With the Control Strip visible, do one of the following:

- To start the PC if it's shut down, choose Start PC from the pop-up menu in the PC Setup module of the Control Strip.
If the PC is already running, the menu will display Restart PC.
- To restart the PC, choose Restart PC from the pop-up menu in the PC Setup module of the Control Strip.
- To shut down the PC, make sure you have shut down Windows 95. Then choose Shutdown PC from the pop-up menu in the PC Setup module of the Control Strip.



Starting the PC automatically

You can set the PC to start automatically when you start your computer, and you can set your computer to switch to the PC environment automatically after startup. To do this, you use the PC Setup control panel.



- To start the PC automatically whenever you start up the Mac OS environment, click the box next to “Auto-start PC” to place an X in it.
- To automatically switch to the PC environment whenever you start up the Mac OS environment, click the box next to “Switch at Startup” to place an X in it.

WARNING If you want to switch to the PC whenever you start up, make sure that the Shut Down Warning option is turned off in the Mac OS General Controls panel. If the warning is on, you may not be able to switch back to the Mac OS environment for a few minutes after switching to the PC.

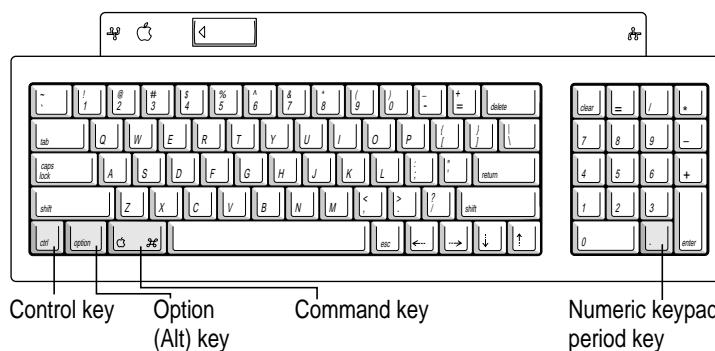
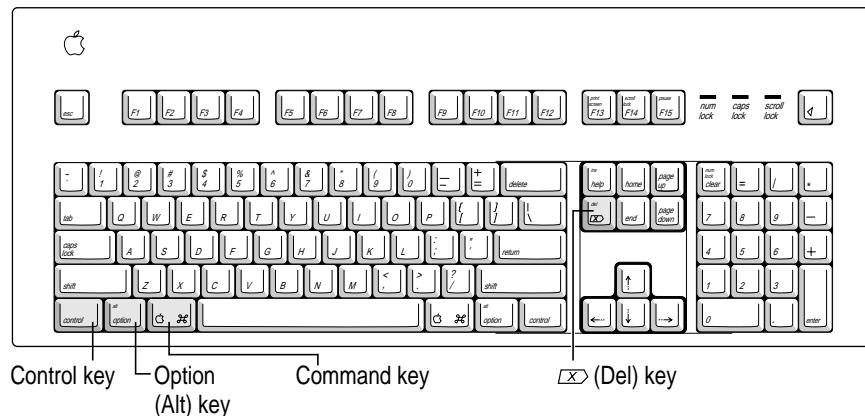
Restarting the PC in the PC environment

To restart (“warm boot”) the PC in the PC environment, use one of the following keyboard combinations:

- Control-Alt-~~X~~ (using the Del key, not the Delete key)
- Control-Alt-. (using the period key on the numeric keypad)

To reset (“cold boot”) the PC in the PC environment, use one of the following keyboard combinations:

- ~~⌘~~-Control-Alt-~~X~~ (using the Del key, not the Delete key)
- ~~⌘~~-Control-Alt-. (using the period key on the numeric keypad)



Using floppy disk drives and floppy disks

Keep the following in mind when you use floppy disks:

- To eject a floppy disk in the PC environment, press ⌘-E .
- In the PC environment, the floppy disk drives are A and B.
- In the PC environment, you cannot use a Mac OS-formatted floppy disk. If you insert one, it will be ejected.
- You can use a locked PC disk in both the PC and Mac OS environments.
- You can access an unlocked floppy disk in the environment that was active when you inserted the floppy disk, but not in the other environment.
- In the PC environment, blank disks are formatted for the PC. In the Mac OS, you can format disks for either environment.
- Some blank disks are preformatted. If you insert a new, blank disk in the PC environment and it is ejected, it may have been preformatted in Mac OS format. To use the disk in the PC environment, you can switch to the Mac OS and format the disk for the PC. For instructions, see the documentation that came with your computer or Mac OS software upgrade kit.

Note: Removable media drives such as Zip or Syquest drives are not directly accessible from the PC environment in the same way that your CD-ROM and floppy disk drives are. However, you can set up a shared folder in the Mac OS environment and then transfer information to and from the removable media. For more information see “Using Shared Volumes” in Chapter 3, “Setting Up the PC Environment.”

Restarting the PC from a floppy disk

To restart (reboot) the PC using a floppy disk, insert a floppy disk containing operating system software into the disk drive. Press Control-Alt- ⌦ to restart the PC.

Using CD-ROM discs and drives

Keep the following in mind when using CD audio discs and CD-ROM discs and drives:

- In the PC environment, press $\text{⌘}-\text{Y}$ to eject a CD. If the disc cannot be ejected (because a file is in use or the disc is being shared), you will hear a beep.
- You can start an audio CD in either environment and continue to listen when you switch environments. (If you start up and switch to the PC while listening to an audio CD, the CD sound may pause for several seconds while the PC starts up.)
- If you have more than one CD-ROM drive, the PC environment can use only the one with the lowest SCSI ID number.
- You can record sound from an audio CD in the PC environment. For more information, see the PC Sound manual that came with your PC Compatibility Card.

Using a pointing device

The standard mouse or other pointing device for Macintosh computers has one button; most PC devices have two buttons that perform different functions. If you do not have a two-button pointing device, you can purchase one from your Apple-authorized dealer. Be sure to ask for an ADB (Apple Desktop Bus) device—input devices designed for a PC will not work with the Macintosh ADB port.

If you have a multibutton Mac OS-compatible pointing device, you may be able to configure it to use the right button in the PC environment. Refer to the instructions that came with your device.

You can use keyboard commands to simulate the actions of the second button. If you are using a one-button device, you can control it as follows:

- The button behaves like the left button on a two-button device.
- There are two ways to simulate pressing the right button:
 - Select an item and then press the $=$ (equal) key on the numeric keypad.
 - Hold down the Command key (⌘) while you press the button.
- To simulate pressing the left and right buttons at the same time, press the button and the $=$ (equal) key simultaneously.

Note: If the software for your two-button device does not automatically configure your device for the PC or does not include a “Windows Right Mouse Button” option, you may be able to assign the = (equal) key to the right button.

Using keyboards

You can use all Apple keyboards with your PC Compatibility Card.

The Option key on an Apple keyboard is the same as the Alt key in the PC environment.

On the Apple Extended Keyboard II, use the following equivalents for keys on a PC keyboard. (These equivalents also apply to the Apple Adjustable Keyboard if the function keyboard isn’t plugged in.)

PC key	Macintosh keyboard equivalent
Alt	Option
F1 through F9	⌘-1 through 9
F10	⌘-0
F11	⌘-(minus)
F12	⌘-(equal)
F13	⌘-[
F14	⌘-]
F15	⌘-\
Home	⌘-[keypad] 7
PageUp	⌘-[keypad] 9
End	⌘-[keypad] 1
PageDown	⌘-[keypad] 3
Insert	⌘-[keypad] 0
Del	⌘-[keypad] (period)
Backspace	Delete
Eject a floppy disk	⌘-E
Eject a CD	⌘-Y

Copying and pasting information between the Mac OS and Windows environments

You can exchange certain kinds of information between the Mac OS and Windows environments using the Copy and Paste commands in the Edit menu in both environments. To do this, the PC Clipboard extension and Macintosh Easy Open (Mac OS Easy Open) control panel must be installed in the Mac OS and the WINCLIP utility must be installed in Windows.

The PC Clipboard translates the following information formats:

- Windows CF_TEXT to/from Mac OS TEXT
- Windows RTF to/from Mac OS RTF
- Windows DIB to/from Mac OS PICT

To determine the format of information in the Mac OS, you can paste the material into the Scrapbook.

Note: Copying and pasting between DOS and the Mac OS is not supported. However, you can paste information into the MS-DOS prompt in Windows 95 by using the paste button. If you want to translate information between the DOS and Mac OS environments, you can exchange files via a file translation program.

When transferring information between the Mac OS and Windows 95, keep the following in mind:

- If you have the PC Clipboard extension installed, the Mac OS and Windows 95 share a Clipboard. That means if you copy an item to the Mac OS Clipboard, switch to Windows 95, and then copy an item to the Windows 95 Clipboard, the original Mac OS Clipboard contents will be deleted.

To prevent this, you can turn off Automatic Document Translation in the Macintosh Easy Open (Mac OS Easy Open) control panel, or you can remove the PC Clipboard extension from the Extensions folder (inside the System Folder in the Mac OS). Removing the extension turns off Clipboard translation between Mac OS and Windows 95.

Note: If you remove the PC Clipboard extension, you will see an alert message every time you switch from the PC to the Mac OS.

- If you want to transfer information from the Mac OS Clipboard to Windows 95, make sure that Windows 95 is running before you switch environments.
- Sounds cannot be transferred on the Clipboard between the Mac OS and Windows 95. You must use a sound translation program to transfer sound files.
- When you're in the PC environment, all Mac OS programs are put in the background and the PC Clipboard runs in the foreground. You can prevent this by removing the PC Clipboard extension from the Extensions folder (inside the System Folder in the Mac OS). Removing the extension turns off Clipboard translation between the Mac OS and Windows 95.

Note: If you remove the extension, you will see an alert message every time you switch from the PC to the Mac OS.

If you are having trouble pasting information between Windows and the Mac OS, try the following:

- Assign more memory to the PC Clipboard utility and to the Mac OS application into which you are pasting information.
- Make sure that Macintosh Easy Open (Mac OS Easy Open) is installed.
- In the Macintosh Easy Open (Mac OS Easy Open) control panel, make sure the Automatic Document Translation option is turned on.
- Save the document you're copying from in a different format. Then reopen the document and copy the material you want to move.
- Use the Paste Special command that is available in some Windows applications. This command lets you specify the format of material you're pasting.
- If you're pasting an image to the Win95 WordPad, try using the command "Insert Object as Paintbrush Picture."
- Images that are compressed in the Mac OS (such as Kodak Photo CD thumbnails) may display only in gray when you paste them into Windows. If this happens, try expanding the image before copying it.

Transferring large bitmap images

If you are transferring large bitmap images from the PC to the Mac OS environment, you may have to increase the memory allocated to the PC Clipboard application. To increase the memory allocation, follow these steps:

- 1 Open the System Folder and then open the Extensions folder.
- 2 Select the PC Clipboard icon.
- 3 Open the File menu and choose Get Info.



- 4 In the Preferred Size text box, type a larger memory allocation, such as 1000K.
- 5 Close the PC Clipboard Info window.

Using onscreen help in the PC environment

You can install onscreen help for the PC environment when you install the support software. If you install help, it will be available in the PC environment in the HELP directory, in the directory where the Apple software is installed.

To start help in Windows 95, follow these steps:

- 1 Open the "My Computer" icon on the Windows 95 desktop.
- 2 Open the C drive.
- 3 Open the Apple software folder. (The default folder name is "Apple.")
- 4 Open the Help folder.
- 5 Double-click the SETUPHELP application.

Using shared folders and volumes

You can share Mac OS folders and volumes with the PC by assigning them drive letters. The MACSHARE utility (installed with the PC support software) makes this possible.

Note: When you name a folder in the Macintosh environment that you intend to share with the PC environment, use a name that conforms to DOS 8.3 filename guidelines. Otherwise, the sharing software will truncate and translate the name to fit the guidelines. For more information about naming files, see your DOS manual.

Note: PC applications and their files work more quickly in a drive container or on a hard disk than in a shared folder. The performance of Mac OS programs is not affected by placing them in shared folders.

IMPORTANT Information in the “resource fork” of a Mac OS file (such as an original icon) is lost when the file is copied in the PC environment. This may damage some files. To copy a QuickTime file, for example, you must open it in the Mac OS using the MoviePlayer program and save it in “non-Apple computer format” before copying or using it in the PC environment.

Using PC files in the Mac OS environment

There are three ways to access PC files in the Mac OS:

- You can access PC files on a floppy disk. For more information, see “Using Floppy Disk Drives and Floppy Disks,” earlier in this chapter.
- You can access PC files in a shared folder or volume. For information on setting up a shared area, see “Using Shared Volumes” in Chapter 3.
- You can access PC files in a PC drive container or a PC-formatted SCSI hard drive attached to your Macintosh.

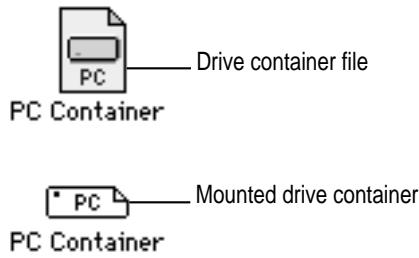
With Macintosh PC Exchange, you can see, move, and copy PC documents as icons in the Mac OS. However, you may not be able to open every kind of PC file in the Mac OS. If you can't open a file or if the file is not displayed properly, try one of the following:

- Try opening the file using a different application program.
- Translate the document into a different file format using a file translation utility.
- If your PC program has an Export feature, use it to save the document in a different file format.
- Use a PC–Mac OS translation utility.

To gain access to files in a PC drive container from the Mac OS, follow these steps:

1 In the Finder, double-click the drive container to open it.

The drive container appears on the Mac OS desktop as one of the following disk icons:



2 Double-click the container's disk icon.

The icon opens and you have access to the files inside it.

Note: If the PC is running, you can copy files from the drive container to the Mac OS, but you can't add anything to the drive container or change any files in it. If you want to add or change files from the Mac OS environment, you must shut down the PC.

5

Troubleshooting



Consult this chapter when you have questions about using the PC environment on your Macintosh.

If you have questions about using Windows 95 or PC application programs, see the manuals that came with your operating system software or programs.

WARNING If you have a problem with your PC compatibility hardware or software and nothing presented in this manual solves it, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance. If you attempt to repair the PC compatibility hardware yourself, any damage you may cause will not be covered by the limited warranty. Contact an Apple-authorized dealer or service provider for additional information about this or any other warranty question.

Starting up

The Macintosh “freezes” during startup.

Restart the computer while holding down the Shift key. This turns off extensions. After the computer starts up, restart the computer again. If the computer still doesn’t start up, consult the troubleshooting information in the user’s manual that came with the computer.

The PC Setup icon has a red slash through it at startup.

The PC setup extension did not load.

You may have started up the computer holding down the Shift key, which turns off extensions. Restart the computer without holding down the Shift key.

A RAM disk or RAM cache in the Mac OS may be using too much memory. Reduce the size of the RAM disk or RAM cache, and restart the computer.

There may be a problem with the PC Setup Prefs file (in the Preferences folder within the System Folder). Remove the file and restart the Macintosh. Then use the PC Setup control panel to recreate your settings. If this doesn’t work, try reinstalling the PC software (see Chapter 2, “Installing the PC Compatibility Card Software”).

The Mac OS software for the PC Compatibility Card doesn’t seem to be installed.

See Chapter 2, “Installing the PC Compatibility Card Software,” for a list of the Mac OS software that is required for the PC Compatibility Card. If any of these items is missing, and you are having trouble using the PC Compatibility Card, try reinstalling the software, following the instructions in Chapter 2.

The PC didn’t start up.

Open the PC Setup control panel. If drive C is not assigned to a drive container or hard disk drive, you see a question mark icon in the C drive box. In this case, either assign drive C to an existing drive container or create a new drive container (see “Creating a Drive Container” in Chapter 2).

In the PC Setup control panel, make sure the On button is selected. If it is, click Start PC at the bottom of the control panel. If the On button is not selected, click it; then restart your Macintosh. Open the PC Setup control panel again and click Start PC.

If the On button is selected and you have restarted the Macintosh, but the “Switch to PC,” Start PC, and Shut Down PC buttons are not available, there may be a problem with your PC Compatibility Card. Consult your Apple-authorized service provider.

There may be a problem with an additional DIMM installed on your PC Compatibility Card. Open the PC Setup control panel and check the RAM portion of the control panel. If no DIMM is indicated and you have installed an additional DIMM, remove it and restart the computer. If a DIMM is detected by the PC Setup control panel, you can still remove it and restart the computer. For more information on adding and removing DIMMs, see Appendix C, “Adding Memory to Your PC Compatibility Card.”

When I start up the computer it goes directly into the PC environment.

If you don’t want the PC environment to start automatically, return to the Mac OS environment by pressing ⌘-Return . Open the PC Setup control panel and make sure the “Switch at Startup” box is not checked.

DOS begins to start up but then the screen freezes. The cursor blinks, but I cannot type anything.

Press $\text{⌘-Control-Alt-} \square$ to restart the PC. (If you do not have the \square key on your keyboard, use the period key on the numeric keypad.) When you see the message “Starting MS-DOS” or “Starting Windows 95,” follow this step to bypass your CONFIG.SYS and AUTOEXEC.BAT files:

DOS or Windows: Press and hold the Shift key.

Windows 95: Press and hold the F5 key.

After the PC has started up, check the CONFIG.SYS and AUTOEXEC.BAT files, change any incorrect lines, and then restart the PC.

Switching to and from the PC

I can't remember the command I set to switch back from the PC environment to the Mac OS.

In the PC environment, you can always use $\text{⌘}-\text{Return}$ to switch back to the Mac OS environment. To change the command, see “Switching Between the Mac OS and PC Environments” in Chapter 4.

There is a delay when switching between environments.

There is a delay when you switch to the PC immediately after starting it or when you use the $\text{⌘}-\text{Control}-\text{Alt}-\text{⏏}$ command to perform a hard restart. The PC is performing some system configuration tasks.

When switching would interfere with a Mac OS system task, there is a slight delay until the task is completed.

There also may be a delay while a large amount of Clipboard information is transferred.

If you are switching to the PC immediately after starting up the computer, make sure the Shut Down Warning is turned off in the General Controls panel in the Mac OS. If it is on, you may not be able to switch back to the Mac OS for several minutes after switching to the PC.

**When I switch to the Mac OS from the PC environment, a message appears:
“PC Clipboard requires additional system services in order to function. Please ensure
that the PC Compatibility Card is successfully installed.”**

Mac OS Easy Open software may be turned off or may not be installed. Restart the computer, open the Mac OS Easy Open control panel, and make sure the software is turned on. If you can't find the control panel, you need to reinstall it.

**In the PC environment, I see the message “Non-system disk or disk error. Replace and
strike any key when ready.”**

The PC Compatibility Card can't find operating system software such as DOS or Windows.

A nonbootable floppy disk may be in the floppy disk drive. Press $\text{⌘}-\text{E}$ to eject the disk; then press any key to continue or try restarting the PC again.

Also, make sure drive C is assigned to a drive container or hard disk drive that contains DOS or Windows software.

If you can't find a drive container, it may have been installed on an external drive that is not turned on, or on removable media that is not available. Or the drive may have been thrown away or never created. (See Chapter 2, "Installing the PC Compatibility Card Software," for more information on drive containers.)

My monitor flashes oddly when I switch environments.

When you are using a single monitor for both environments, there is a flash when you switch from one environment to the other. If you prefer not to see the flash, select the Fade Screens option in the PC Setup control panel.

Monitor problems

See also the troubleshooting section in Appendix E, "Configuring Video Software."

When I try to switch to the PC environment, my screen is blank or garbled.

Open the PC Setup control panel and check the Monitor portion of the control panel.

If you see the message "Not Supported," your monitor may not be compatible with the PC Compatibility Card. Refer to Appendix E, "Configuring Video Software," for monitor specifications and video modes, and check with your monitor vendor to see if your monitor conforms to these specifications.

If you see the message "No Monitor," your monitor may not be connected properly. Make sure your monitor is connected according to the instructions in the chapter for installing the card in your computer model and Chapter 1, "Connecting Monitors and Other Equipment."

If you're using a VGA monitor connected to a VGA-to-Macintosh adapter, you may be able to reconfigure the adapter to identify itself to the PC Compatibility Card and Macintosh. Check the documentation that came with your monitor and adapter.

Make sure that you've configured your video software correctly. The PC Compatibility Card does not support resolutions greater than 1280 x 1024. For more information, see Chapter 2, "Installing the PC Compatibility Card Software," and Appendix E, "Configuring Video Software."

The PC Setup Prefs file may be damaged. Locate the file (in the Preferences folder inside the System Folder) and drag it to the Trash; then restart the Macintosh. When the Mac OS starts up, open the PC Setup control panel and reconfigure your settings.

I tried configuring my display and now it won't work properly.

In Windows 95, if you choose a configuration that doesn't display properly, follow these steps to correct the problem:

1. Switch to the Mac OS by typing $\text{⌘}-\text{R}$.
2. In the PC Setup control panel, click Restart PC.
3. Switch to the PC.
4. When you see the message "Starting Windows 95," press F8 to enter Safe Mode.
5. When Windows 95 starts up, click Start, choose the Settings menu item, and click Control Panel.
6. Double-click the Display icon.
7. Click the Settings tab, and select a correct monitor setting in the list that appears (such as 640 x 480). Then restart Windows 95.

My monitor flashes oddly when I switch environments.

When you are using a single monitor for both environments, there is a flash when you switch from one environment to the other. If you prefer not to see the flash, select the Fade Screens option in the PC Setup control panel.

When I start up certain software in the PC environment, my monitor shows a jumbled or rolling image.

You may have selected the wrong monitor type when configuring your video software. For more information, see Chapter 2, "Installing the PC Compatibility Card Software."

Some application programs that write directly to the hardware (especially games) may not work with some monitors. Contact the software company and ask if the software has a switch to force it to make BIOS calls.

The PC Setup control panel does not report the correct monitor type.

Hold down the Option key and open the Monitor pop-up menu. Choose “Sense Display Type.” If that does not solve the problem, hold down the Option key and open the Monitor pop-up menu. Choose the monitor that most closely matches your monitor.

You may have a VGA-to-Macintosh adapter that is set incorrectly.

If you are using the AppleVision 1710 or 1710AV display, make sure that the AppleVision software is installed in the Mac OS environment and that the monitor’s ADB cable is connected to the Macintosh ADB port. For more information, see Chapter 1, “Connecting Monitors and Other Equipment.”

If you are using a non-Apple monitor, it may report the incorrect monitor type. If you are using a multiscan monitor, you may want to turn off autosensing in the PC Setup control panel. Hold down the Option key, open the Display pop-up menu, and choose the monitor that most closely matches your monitor.

PC Setup seems to detect my monitor correctly, but when I switch to the PC environment the image is jumbled or rolling.

If you are using a VGA-to-Macintosh adapter, check whether you can control the “sync” pulse on one or more signals going to the display. If so, try changing the “sync” pulse and see if this solves the problem.

My non-Apple display does not seem to work correctly in the PC environment.

- Use the Windows 95 Display control panel to select your monitor name. If your monitor name is not available, select the SuperVGA monitor option that matches the maximum resolution supported by your monitor.
- Use the Windows 95 control panel to set the refresh rate to 60 Hz. For more information, see Appendix E, “Configuring Video Software.”
- If the monitor still does not display properly, reduce the resolution.

Problems using a modem

My modem is not working correctly in Windows 95.

Try disabling the “Use flow control” or “Use error control” options for the modem. To do so, follow these steps:

1. In Windows 95, click the Start button, choose the Settings menu item, and then choose Control Panel.
2. Double-click the Modem icon.
3. Click the Properties button.
4. Click the Connection tab in the dialog box that appears.
5. Click the Advanced button.
6. Deselect the “Use flow control” or “Use error control” options, and click OK.

If you are having trouble connecting at higher baud rates, try setting the modem speed to 19,200 baud or less.

When I try to use my Mac OS communications software, I get an error that says the selected port is in use.

Your Mac OS communications software may be trying to use a port that is assigned to the PC Compatibility Card. Open the PC Setup control panel and unassign the selected port by setting it to None.

After I assigned a PC COM port to a Macintosh serial port, my computer did not start up properly.

This problem can occur if you are using Apple Remote Access (ARA) 2.0 or 2.0.1. To correct the problem, restart while holding down the Shift key to temporarily turn off all system extensions. Then remove the Serial Port Arbitrator from the Extensions folder inside your System Folder, and restart your computer. (Before you use ARA, unassign the PC COM port and restart the Mac OS environment.) You can also correct this problem by upgrading to ARA 2.1.

Problems with files and disks

I can't eject my floppy disk or CD when I am in the PC environment.

To eject a floppy disk in the PC environment, press **⌘-E**. To eject a CD in the PC environment, press **⌘-Y**.

If you are unable to eject the disk using the keyboard combination, the disk may be in use. Close all open applications in both environments and then try to eject the disk from the Mac OS environment.

I want to assign a drive container to the C or D drive, but I can't find the drive container in the dialog box.

The drive container may be assigned to another drive letter. Check the C: and D: pop-up menus.

The drive container may be on an external hard drive. Make sure that the drive is connected correctly and the power is on. If it is not connected, shut down the computer, reconnect it, and then restart.

I want my drive container to have more than one partition.

Create a new drive container following the instructions in “Creating a Multiple Partition/Bootable Drive Container” in Chapter 3. Initialize the drive container in DOS using the FDISK and FORMAT commands.

I can't share all the folders I want.

Make sure that you have sufficient drive letters assigned in your CONFIG.SYS file's LASTDRIVE statement. The PC reserves the letters A–E; other letters are available to be assigned to shared folders or volumes.

Novell NetWare may reassign drive letters even if you have assigned them to shared folders. Try reserving additional drive letters and reassigning your shared folders.

I inserted a floppy disk in the PC environment and it was ejected.

The disk may have been formatted for the Mac OS. Switch to the Mac OS and try inserting the disk again.

I want to change the size of my drive container.

Once a drive container is created, its size cannot be changed. If you need to increase the size of your drive container in order to install more applications or files, you can create another drive container and assign it to drive D.

I inserted a PC-formatted disk in the Mac OS and an initialization message appeared.

PC Exchange may not be installed in the Control Panels folder. If you don't find it, you can reinstall it using your system software CD-ROM disc.

The disk may be damaged. Try inserting another disk. If that works, test the original disk in the PC environment using a disk repair utility.

I can access a floppy disk from one environment but not the other.

Only a locked floppy disk can be accessed in both environments simultaneously. Eject, lock, and reinsert the disk, or eject the disk, switch to the environment you want to use it in, and reinsert the disk. The disk must be formatted for the PC if you want to use it in the PC environment.

I switched to the Mac OS, and I don't see the floppy disk I was using.

The floppy disk may not have been locked. To use an unlocked PC-formatted floppy disk in the Mac OS, you must switch to the Mac OS before inserting the disk. To use a disk in both environments, lock the disk.

Shared folders don't get updated in Windows 95.

Sometimes you need to refresh shared folders manually in Windows 95. Click "My Computer," click View, then click Refresh.

In some Microsoft applications, a shared drive icon looks like a floppy disk or CD icon.

The shared drive is still usable.

I can't access my Zip or Syquest drive while in the PC environment.

While in the PC environment, you can't access removable media directly the same way you access the floppy disk drive. However, you can set up a shared folder in the Mac OS environment and then transfer information to and from the removable media. For more information, see "Using Shared Volumes" in Chapter 3, "Setting Up the PC Environment."

I am unable to use Microsoft Backup.

In Windows 95, you cannot use Microsoft Backup because it needs a PC floppy drive controller that does not exist in your Macintosh. You can use a Mac OS backup program to back up your PC container file.

You can use Microsoft Backup in Windows 3.1 or Windows for Workgroups. To do so, configure the backup manually by following these steps:

1. Add the following line to the [386enh] section of your SYSTEM.INI file:

```
device=vfintd.386
```

Your SYSTEM.INI file is in the WINDOWS directory.

2. Start the Microsoft Backup program.
3. Click No in the Auto-configure dialog box.
4. In the Configuration window, select “1.44 Mb 3.5” in the Drive A list box.

You may also click Configure from the standard toolbar at the top. Do not click the Compatibility Test button because it may cause a system “freeze.”

5. Click Backup on the standard toolbar.
6. If you are backing up to floppy disks, choose MS-DOS Path from the Backup To list box. Type “A:\” in the second list box that appears.
You can type a different path to back up to a network device.

7. Continue with your backup.

When you use the Compare or Restore options, you must choose MS-DOS Path in the Compare From and Restore From list boxes.

I can't start up the PC from a drive container created in Insignia SoftWindows or SoftPC.

You can use drive containers created with SoftWindows or SoftPC, but you will not be able to start up from them. When you select a container created with SoftWindows or SoftPC, be sure to choose a drive letter other than C.

If SoftWindows or SoftPC is running, you cannot access the drive containers.

In the PC environment, the CD-ROM drive doesn't recognize some CDs.

The PC Compatibility Card only recognizes the following types of CDs: PC format (ISO 9660), dual format (discs formatted for both the Macintosh and PCs), and audio. Some specialized formats are not supported.

Problems with information transfer

Copying and pasting between environments isn't working.

Only certain kinds of information can be copied and pasted. See “Copying and Pasting Information Between the Mac OS and Windows Environments” in Chapter 4 for more information.

Copying and pasting between Mac OS and Windows works only if the PC Clipboard extension is installed in the Extensions folder inside the System Folder (in the Mac OS) and WINCLIP is installed in the Windows environment.

Check the Control Panels folder in your System Folder to make sure that the Macintosh Easy Open (Mac OS Easy Open) control panel is installed. Make sure the Automatic Document Translation option is turned on.

If Mac OS Easy Open is not available, you can install it from your system software CD.

Windows must be running before you begin to copy and paste.

You cannot copy and paste between the Mac OS and DOS.

The PC Setup Prefs file may be damaged. Locate the file (in the Preferences folder inside the System Folder) and throw it away; then restart the Macintosh. When the computer starts up, open the PC Setup control panel and reconfigure your settings.

Tips for copying and pasting images

If you are having trouble copying and pasting text or images between the Mac OS and PC environments, try the following tips:

- Instead of using the Paste command, use the Paste Special command if it is available in the application you are pasting into.
- If you cannot paste an image into a word-processing program in the PC environment, try pasting the image into a graphics program, such as PaintBrush. Then copy the image to the Clipboard from the graphics program and try pasting it into your word-processing program.

- Instead of copying and pasting, use a shared folder to transfer an entire file from one environment to another. Some Macintosh and Windows programs can open files created on other platforms. For example, ClarisWorks® for Windows can open ClarisWorks files created in the Mac OS environment, and vice versa. Even if you are using two different programs, you may be able to save a file in a file format that both programs understand, such as RTF for text, and EPS or TIFF for graphics. (Check the manuals that came with your programs to see if they support common file formats.)
- If you must use the Clipboard to transfer a lot of data or a large graphic, try transferring the data in smaller pieces or making more memory available to the application. For more information on increasing a program's memory, see the "Memory" topic area of Mac OS Guide, available in the Guide (②) menu.
- If you are copying and pasting a Photo CD image, make sure you are copying an expanded version of the image.

I can't copy graphics from a Microsoft Word 6.0 document in the Mac OS environment.

Try this method instead:

1. Select the graphic in Word 6.0 and choose Cut from the Edit menu.
2. Open the Edit menu and choose Paste Special.
3. In the Paste Special dialog box, select Picture format and click OK.
4. Select the graphic you just pasted and choose either Cut or Copy from the Edit menu.
5. Switch to the PC environment and try pasting the graphic.

I can't copy files from the Mac OS environment to a drive container.

To copy files to a drive container, the drive container file has to be mounted on the desktop and the PC must be shut down.

I cannot open or save my files in a shared folder.

With some Windows 95 programs, you may not be able to open or save files in a shared folder. You may have to move a file out of the shared folder before you can open it, or save a file in a different location and then move it into the shared folder.

Communication and network problems

I can't connect to a network in the PC environment.

Make sure that your networking software is properly installed and configured (see the section on installing network support for Windows or Windows 95 in Chapter 2, “Installing the PC Compatibility Card Software,” and see Appendix D, “Installing Network Client Software”).

Make sure the network is up and running (check the Chooser and check with your network administrator).

My PC communications software doesn't work.

The Macintosh serial port does not have the same interface as the PC does and some commands do not work. See “Setting Up a Modem or Other Serial Device” in Chapter 3.

I get an error message associated with my Windows 95 PROTOCOL.INI file.

If an error message appears stating that there are illegal decimal characters in the PROTOCOL.INI file, the Windows 95 Network control panel may have modified some of the lines. To correct this problem, run the SETNET utility. For more information, see Appendix D, “Installing Network Client Software.”

My system “freezes” when I am using ODI with Windows 95.

You may experience system “freezes” if you are using NetBEUI or TCP/IP with ODI in Windows 95. To correct this problem, delete the following line from the STARTNET.BAT file in the NWCLIENT directory:

C:\WINDOWS\ODIHLP.EXE

After deleting the line, add it to the end of your AUTOEXEC.BAT file.

When I start up in the PC environment I get a message that a shared volume no longer exists.

Reassign the drive letter to a new drive. If you cannot remember the drive letter, drag the PC Setup Preferences file to the Trash, open the PC Setup control panel, and reconfigure your settings.

Configuration problems

I can't assign a COM port to a Macintosh serial port.

COM ports cannot be assigned to Macintosh serial ports that are in use by an application or network software.

If you assign a COM port to a Macintosh serial port, the serial port cannot be used by the Mac OS until you unassign the COM port.

When I try to use my Mac OS communications software, I get an error that says the selected port is in use.

Your Mac OS communications software may be trying to use a port that is assigned to the PC Compatibility Card. Open the PC Setup control panel and unassign the selected port by setting it to None.

Sound problems

I can't hear PC sounds.

PC sound may be turned off in the PC Setup control panel.

If you can't hear sound from a CD, make sure that the internal audio cables are installed according to the instructions in the chapter on installing the PC Compatibility Card in your computer model.

The PC Compatibility Card can play sound only from the CD-ROM drive with the lowest SCSI ID number. If you're using another CD-ROM drive, you won't hear sound when you switch to the PC environment.

If you are using DOS or Windows, increase the speaker volume with the Sound Blaster Mixerset application. To run the Mixerset application from DOS, change to the VIBRA16 directory, type `mixerset`, and press Return.

Check that the AUTOEXEC.BAT and CONFIG.SYS files contain the following lines:

AUTOEXEC.BAT (for Windows 95)

```
SET SOUND=C:\PROGRA~1\CREATIVE\CTSND  
SET BLASTER=A220 I5 D1 H5 P330 T6  
SET MIDI=SYNTH:1 MAP:E
```

AUTOEXEC.BAT (for Windows)

```
SET SOUND=C:\VIBRA16  
SET BLASTER=A220 I5 D1 H5 P330 T6  
SET MIDI=SYNTH:1 MAP:E  
C:\VIBRA16\DIAGNOSE /S  
C:\VIBRA16\MIXERSET.EXE /P /Q
```

CONFIG.SYS (for Windows 95 or Windows)

```
DEVICE=C:\VIBRA16\DRV\VIBRA16.SYS /UNIT=0 /BLASTER=A:220  
I:5 D:1 H:5  
DEVICE=C:\VIBRA16\DRV\CTMMSYS.SYS
```

CD sound went away when I switched environments.

If you are playing an audio CD when you start the PC and switch environments, there is a delay in the sound while the PC completes some system configuration tasks.

Check that the CONFIG.SYS file contains this line:

```
DEVICEHIGH=C:\APPLE\CDROM.SYS/D:CDDRVR
```

Check that the AUTOEXEC.BAT file contains this line:

For Windows 95:

```
LOADHIGH C:\WINDOWS\COMMAND\MSCDEX.EXE /D:CDDRVR /L:E
```

For Windows:

```
LOADHIGH C:\DOS\MSCDEX.EXE /D:CDDRVR /L:E
```

I'm using Windows or Windows for Workgroups, and I can't play audio CDs with the Media Player or CD utilities.

Reinstall the MCI CD Audio driver from your original Windows installation disks. To install this driver, open the Control Panel icon in the Main program group. Double-click the Drivers icon, select [MCI] sound driver and click the Add button in the window that appears. Select [MCI CD Audio] from the scroll list and click OK. Insert the specific Windows installation disk if necessary.

Printing problems

Printing doesn't work.

Make sure that you've selected the correct preferences in PC Print Spooler (in the Extensions folder inside the System Folder). If your printer does not support PostScript, choose Epson.

Make sure that you have chosen appropriate printer drivers in your DOS applications and your Windows environment. If you have a PostScript Level 1 printer, you must choose a PostScript Level 1 printer driver in Windows—a driver for a Level 2 printer will not work.

Make sure a printer is selected in the Macintosh Chooser.

If you're using Windows, make sure that bidirectional printing and the "Check port before printing" options are turned off. If you're printing to a PostScript printer, make sure that the "Send Ctrl+D" feature is turned off.

For more information, see "Setting Printer Options" in Chapter 3.

When I try to print from the DOS prompt, I get an error message.

If you're using a PostScript printer driver, open PC Print Spooler in the Extensions folder (inside the System Folder). Choose Preferences from the File menu. Make sure the checkbox labeled "Allow DOS Text Printing" has an X in it. Switch to DOS and try printing again (or move the spool file from the Spooler Rejected folder to the Spooler folder).

When I print a document in the PC environment, the top and bottom get clipped.

If you're using Epson emulation, open PC Print Spooler in the Extensions folder, choose Preferences from the File menu, and select "Gaps between pages." In the PC environment, configure your applications to print to a 60-line page.

When I print a document from a DOS application, the fonts don't look right.

Try choosing different fonts. If you're using Epson fonts instead of bitmap fonts, use monospaced fonts for best formatting results.

If you're using Epson emulation, you may have chosen Faster Printing in the Preferences dialog box of the PC Print Spooler, which prints the whole document using a single font. Choose Better Quality and try printing again.

You may have selected a proportional space font as your default font in the PC Print Spooler. If you select a proportional space font, the formatting of your files may change. Try selecting a monospaced font such as Courier or Monaco or using the graphical fonts available in your DOS application.

When I print a document in the PC environment, text doesn't print or is cut off, or text that should print at the bottom of one page prints on the next page.

Try selecting "No gaps between pages" in the PC Print Spooler Preferences dialog box, and try printing again. (When you print after choosing this option, the PC Print Spooler software will print 66 lines per page instead of 60 lines per page.) For more information, see "Setting Printer Options" in Chapter 3, "Setting Up the PC Environment."

I selected "No gaps between pages" in the PC Print Spooler Preferences dialog box, but text near the top and bottom of each page still doesn't print or is cut off.

Most laser and ink jet printers cannot print close to the edges of a page. Find out the minimum margins for your printer in the specifications section of the manual that came with your printer. Then reset the top and bottom margins in the application from which you are printing.

When printing multiple files in Windows 95, I keep getting PostScript errors.

Print one file at a time. Printing multiple files may cause a PostScript error. To verify that the file has finished printing, check the Windows 95 printer queue.

I can't print a test page in Windows 95.

When you use Add Printer Wizard to set up a printer, do not print a test page until the printer is configured according to the instructions in “Setting Up Printing in Windows 95” in Chapter 3, “Setting Up the PC Environment.” Then you can print a test sheet by doing the following:

1. In the Printers window, click the icon of the printer you just added.
2. Choose Properties from the Printer menu.
3. In the dialog box that appears, click Print Test Page.

When I print from Windows 95 to my Hewlett Packard PostScript printer, I get several pages of strange text.

This occurs with some Hewlett Packard printers that support both PCL and PostScript, including the following printers:

- LaserJet 6 Series w/ PostScript
- LaserJet 5 Series w/ PostScript
- LaserJet 4 Series w/ PostScript
- DeskJet 1600C/CM
- DeskJet 1200C/PS

The Windows 95 printer drivers for these printers include non-PostScript information called a PJL (Printer Job Language) header that causes the PC Compatibility Card to incorrectly print the PostScript code.

If the first line of every print job contains the letters PJL, you are experiencing this problem. Configure the printer driver not to send a PJL header by setting the printer driver to “archive format.” To do so, follow these steps:

1. Open the Properties window for the HP printer driver.
2. Select the PostScript tab.
3. Change the “PostScript output format” option to “Archive format.”
4. Click OK.

Other problems

I'm running applications in both environments and they seem sluggish.

Significant drive access in one environment (including file sharing) can cause a slowdown in the other.

The PC environment is frozen, and pressing Control-Alt- \square doesn't reset the system.

Try restarting by pressing $\text{⌘}-\text{Control}-\text{Alt}$ -period (the decimal point on the numeric keypad) or $\text{⌘}-\text{Control}-\text{Alt}-\mathbb{X}$. If you can, switch to the Mac OS and click Restart PC in the PC Setup control panel. If these options don't work, restart the Macintosh using the Reset key or keyboard command.

I can't configure my pointing device.

You don't need to configure some pointing devices.

If you have a two-button ADB pointing device, you may be able to use its software to map the = (equal) key on the numeric keypad to the right button. This lets the device behave like a standard PC device.

Appendix A Removing the PC Compatibility Card From Your Power Macintosh 7300 Computer

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To completely remove your PC Compatibility Card hardware from your Power Macintosh 7300 PC-Compatible computer, follow the instructions in this appendix.

To remove the card to add memory, see Appendix B for instructions on how to open the computer, and Appendix C for how to add memory.

To learn how to remove the card from your Power Macintosh 4400 PC-Compatible computer, see the *PC Compatibility Card Update* that came with your computer.

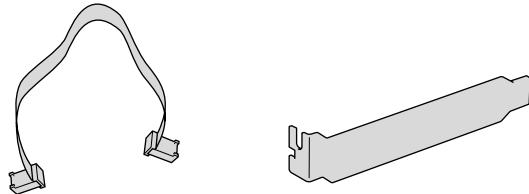
WARNING Do not install the card that came installed in your Power Macintosh 4400 into any other computer. Using this card in another computer could damage the system or cause random crashes. Only a Power Macintosh 4400 model can accommodate the power consumption of this card. (You can install the card from a Power Macintosh 7300 computer into other models.)

WARNING The removal of the PC Compatibility Card is technically complex. Unless you are comfortable working with components inside computers, Apple recommends that you have the PC Compatibility Card removed by your Apple-authorized dealer (who may charge a fee). If you attempt to remove the card yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer.

Do not attempt to remove the card, install memory, install the card, or connect the cables without first reading this manual.

What you need

You'll be removing your PC Compatibility Card and audio cables. For your audio to work correctly, you'll need to install the audio ribbon cable, shown below on the left, that came with your computer. You will also need to install the metal port access cover, shown below on the right, to cover the port access opening on the back of your computer.



Removing the PC Compatibility Card hardware

Opening the computer, expansion card cover, and chassis

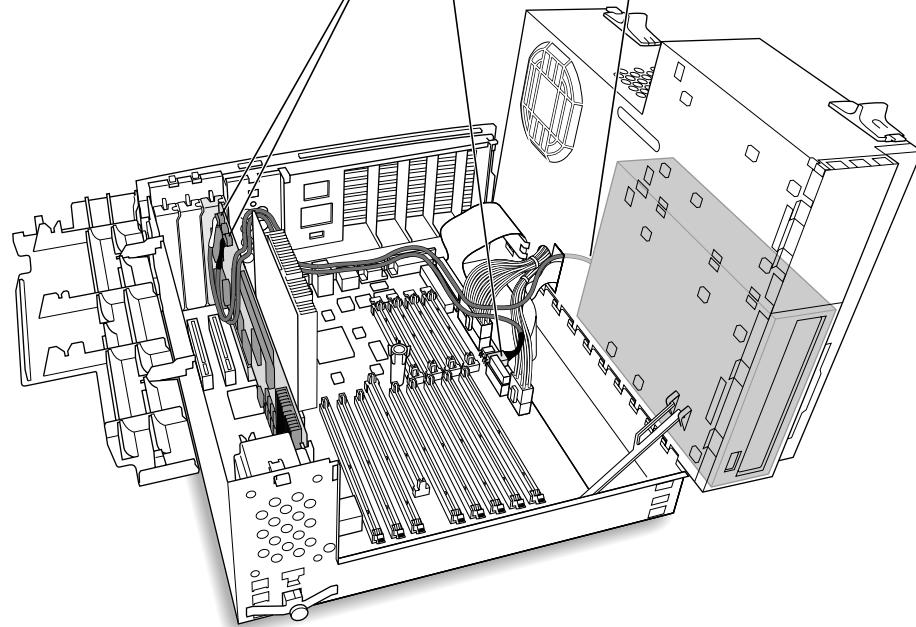
For detailed instructions on opening your computer, expansion card cover, and chassis, including important precautions, see Appendix B.

Disconnecting the cables

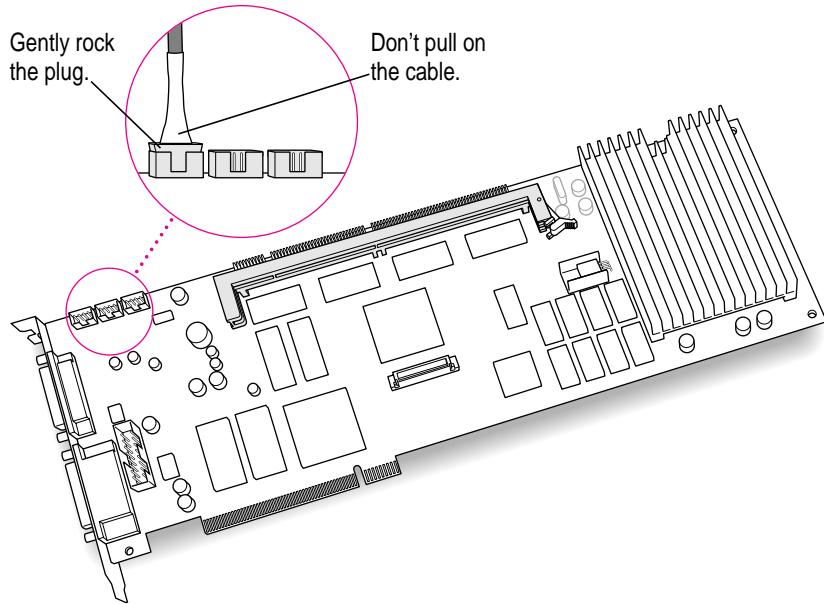
- 1 Unplug the audio cables from the PC Compatibility Card, the Macintosh logic board, and the CD-ROM drive.

Be sure to pull the plugs, not the cables.

Remove the audio cables from the card, the logic board, and the CD-ROM drive.



To remove a small plug attached to the card, grasp the sides of the plug and pull firmly. It may help to gently rock the plug from side to side as you pull.



IMPORTANT Do not attempt to use pliers to remove any plugs; you may damage the plugs, the card, or your computer.

2 Remove any other cables from the PC Compatibility Card.

If you have not already done so, remove the loopback cable and the PC game controller cable (if one is attached) from the ports on the back of the PC Compatibility Card.

If you are also removing a PC Serial and Parallel Card, detach the peripheral flex cable from the PC Compatibility Card.

Removing the card

- 3 Grasp the card by its edges (without touching any components on the card) and pull it straight out of the slot.

IMPORTANT Do not rock the card side to side as you remove it. Doing so may break the card or damage the slot.

Installing the port access cover

- 4 Slide the port access cover into the port access opening at the back of the computer, to cover the opening.

Use the port access cover that came with your computer (shown earlier in this appendix).

Installing the audio ribbon cable

- 5 Plug the audio ribbon cable into your CD-ROM drive and into the CD Audio connector on the Macintosh logic board.

You need the audio ribbon cable that came with your computer (shown earlier in this appendix). Plug either end of the cable into your CD-ROM drive, thread it through the slot in the chassis, and plug the other end into the CD audio connector on the Macintosh logic board (where you unplugged one of the audio cables in step 1).

Replacing the computer's cover

Replace the computer's cover by following the instructions in Appendix B, in the section "Replacing the Computer's Cover."

Appendix B Reinstalling the PC Compatibility Card in Your Power Macintosh 7300 Computer

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If you have removed your PC Compatibility Card from your Power Macintosh 4400 computer and want to reinstall it, see the *PC Compatibility Card Update* that came with your computer.

WARNING Do not install the card that came installed in your Power Macintosh 4400 into any other computer. Using this card in another computer could damage the system or cause random crashes. Only a Power Macintosh 4400 model can accommodate the power consumption of this card. (You can install the card from a Power Macintosh 7300 computer into other models).

If you have removed your PC Compatibility Card from your Power Macintosh 7300 computer and want to reinstall it, follow the instructions in this appendix. (To remove the card, first follow the instructions on how to open the computer, expansion card cover, and chassis in this appendix; then see Appendix A.)

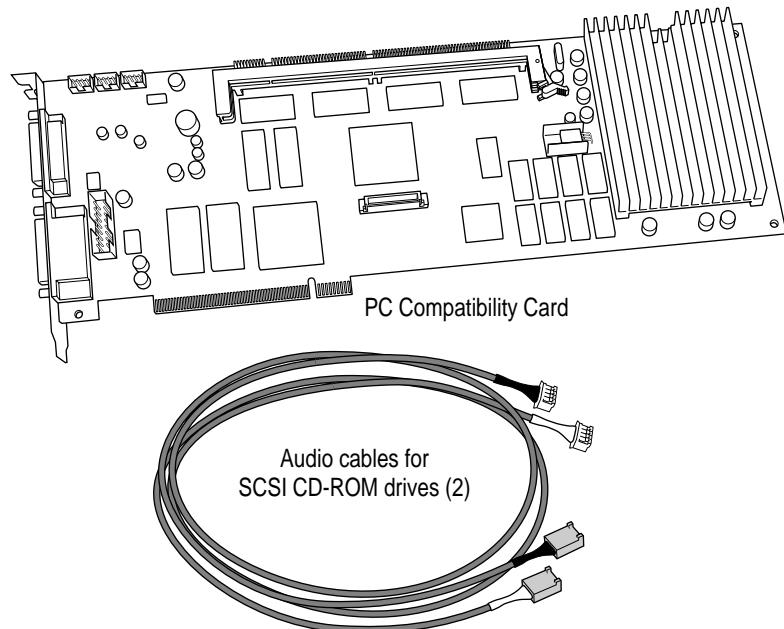
IMPORTANT If you will be installing a PC Serial and Parallel Card with your PC Compatibility Card, it's easiest to install both cards at the same time. The PC Serial and Parallel Card has standard PC ports that allow you to use several kinds of PC-compatible peripherals from the Windows or DOS environment (not from the Mac OS environment). Instructions in this chapter indicate when to see your PC Serial and Parallel Card manual for installation information.

WARNING The installation of the PC Compatibility Card is technically complex. Unless you are comfortable installing components inside computers, Apple recommends that you have the PC Compatibility Card installed by your Apple-authorized dealer (who may charge a fee). If you attempt to install the card yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer.

Do not attempt to remove the card, add memory, install the card, or connect the cables without first reading this manual.

What you need

Before beginning the installation process, make sure you have the PC Compatibility Card and the audio cables.



Installing the PC Compatibility Card hardware

There are several steps to installing your PC Compatibility Card hardware:

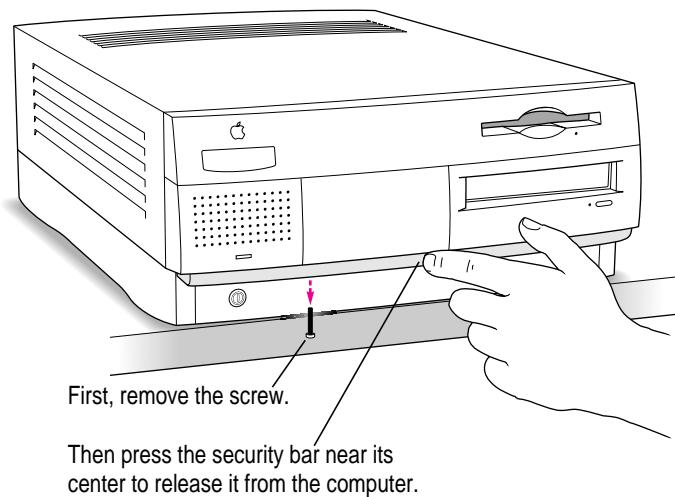
- opening the computer
- disconnecting the CD-ROM audio cable
- opening the expansion card cover and chassis
- inserting the PC Compatibility Card
- connecting the Sound Out cable
- connecting the CD In cable to the card
- replacing the chassis and expansion card cover
- connecting the CD In cable to the CD-ROM drive
- replacing the computer cover

Opening the computer

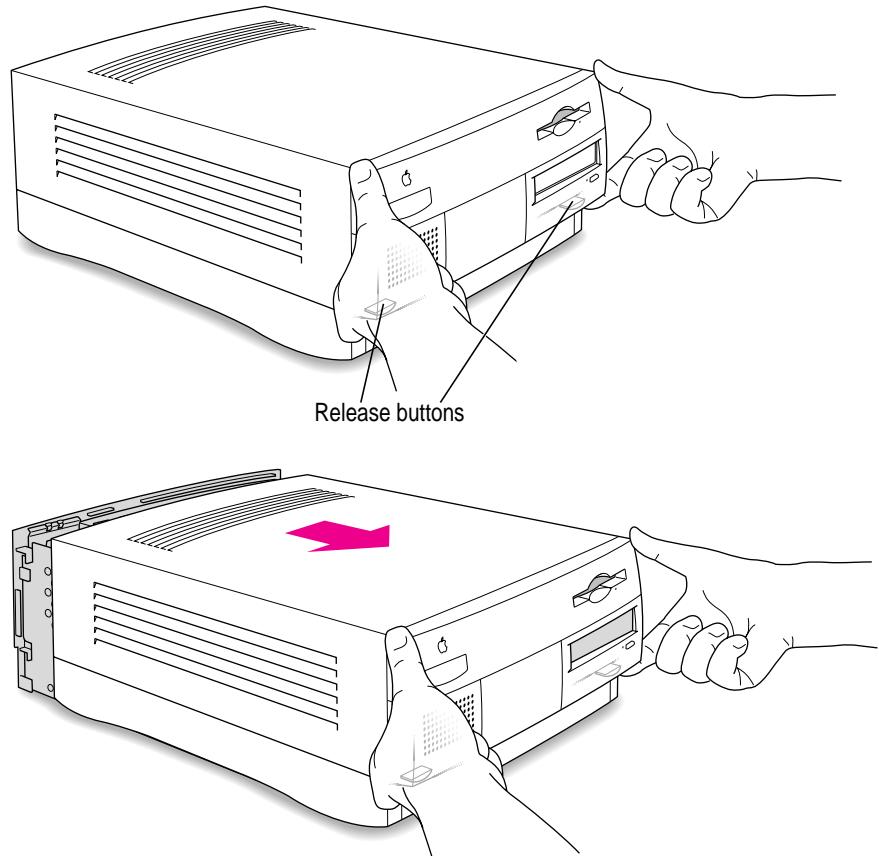
- 1 **Shut down the computer and disconnect all cables from the computer, except for the power cord.**

Leave the computer plugged in for now, to ground it and protect its components from static electricity damage.

- 2 **If the security bar is installed, remove it by removing the screw under the front panel and pressing the center of the bar.**

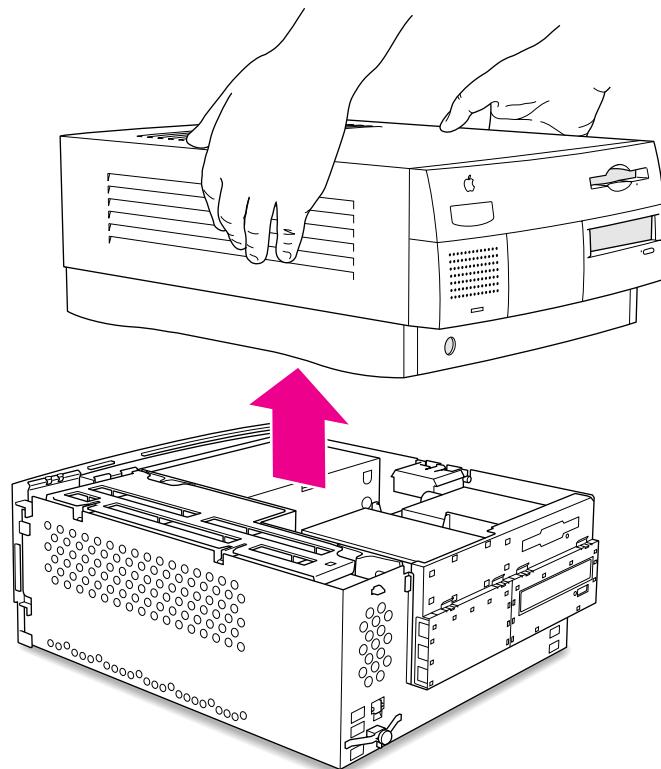


- 3** Press the two release buttons under the front panel and slide the cover toward you approximately two inches.



4 Remove the cover from the computer.

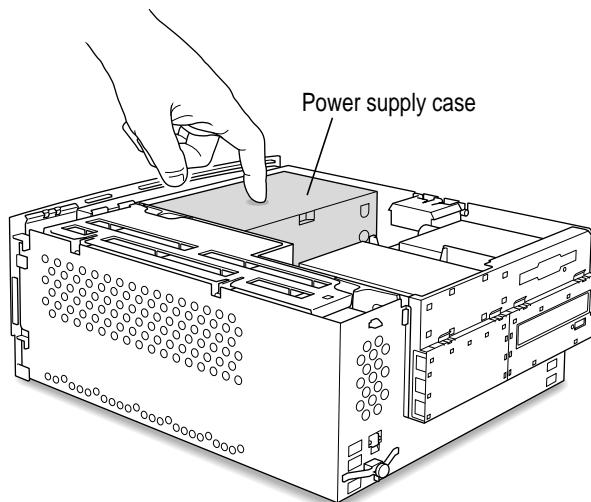
After you've slid the cover forward about two inches, lift it straight up and off the computer.



5 Touch the metal part of the power supply case inside the computer.

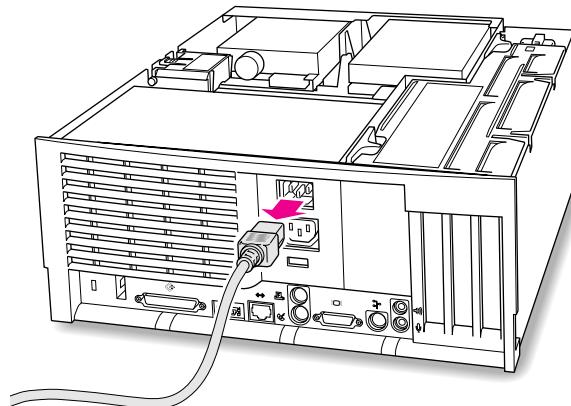
Always do this before you touch any parts, or install any components, inside the computer. Touching the power supply case helps release static electricity from your body and prevent possible damage to internal components.

IMPORTANT You can collect static electricity just by walking away from and then back to your computer. If you need to move away from your computer during installation, remember to touch the metal part of the power supply case again before you continue installing.



6 Disconnect the power cord.

Remove the power cord from the back of your computer.



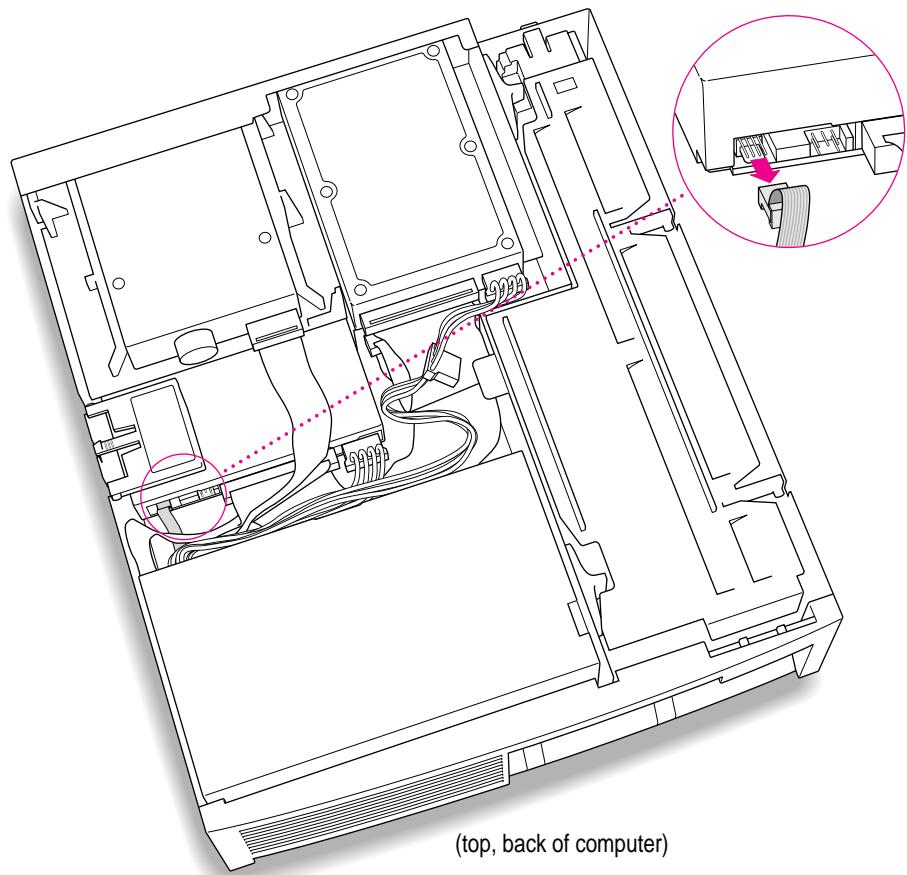
Disconnecting the CD-ROM audio cable

7 Disconnect the audio ribbon cable from the CD-ROM drive.

Your Power Macintosh PC-Compatible computer came with an audio ribbon cable that you connected from your CD-ROM drive to your Macintosh logic board after you removed the card. You need to disconnect this cable.

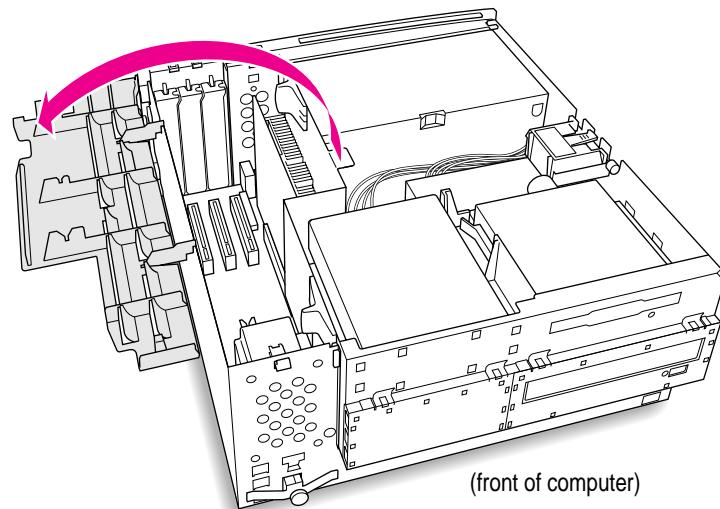
Be sure to pull the plug, not the cable.

Just disconnect this end of the cable for right now. Later you will replace this cable with the other audio cables that came with your PC Compatibility Card.



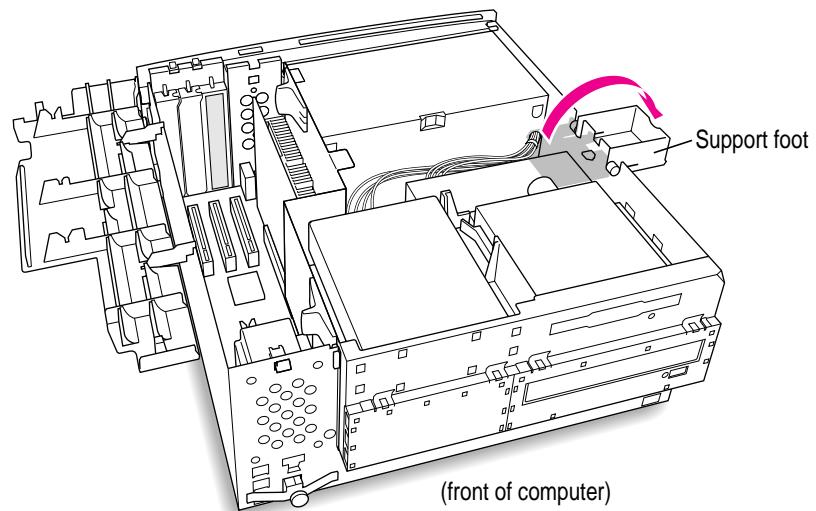
Opening the expansion card cover and chassis

- 8 Flip open the expansion card cover.



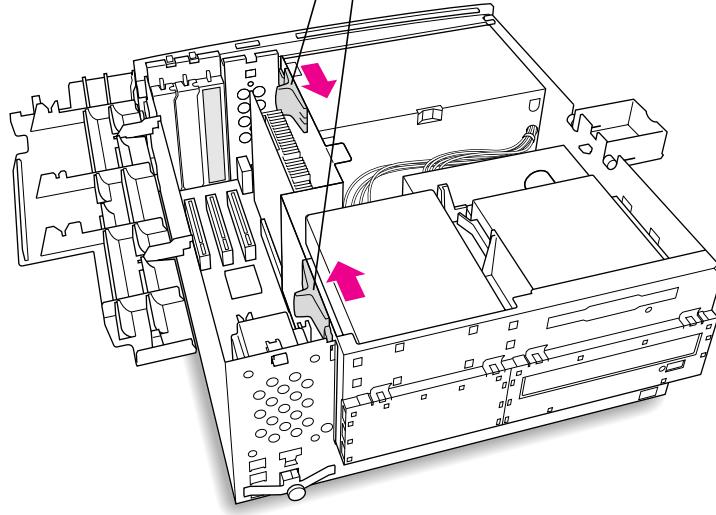
- 9 Position the support foot.

The support foot holds the computer's chassis when you open it.



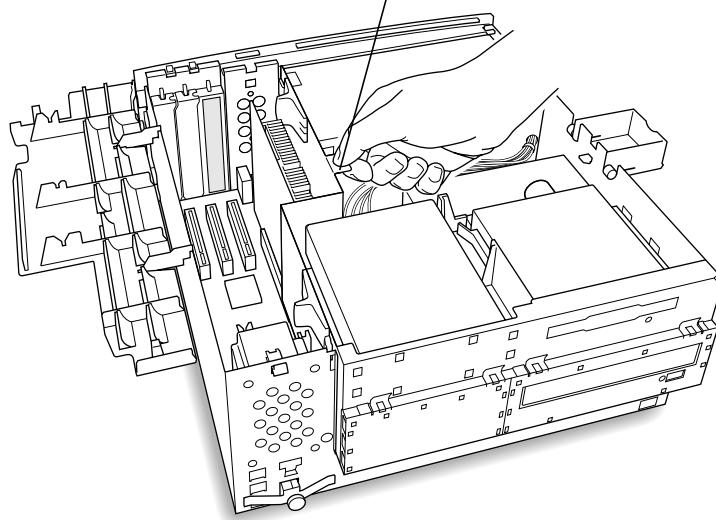
10 **Unlock the chassis release switches.**

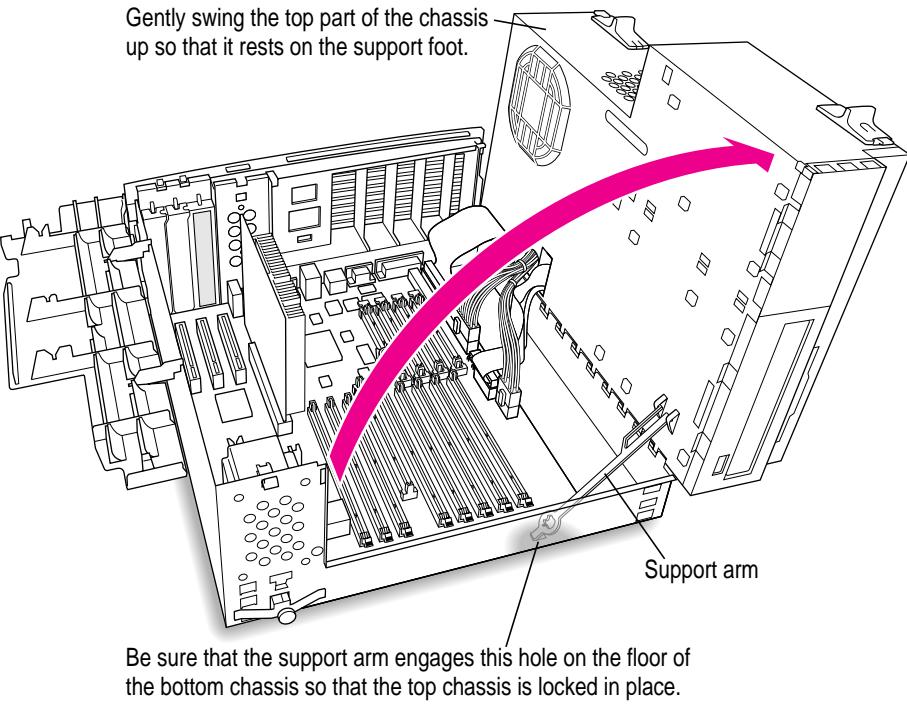
Move the release switches toward the inside of the computer to unlock the top chassis.



11 **Lift the chassis and rest it on the support foot. Make sure the support arm is engaged.**

You can use this tab to lift the top chassis.





What you do next depends on whether you are installing a PC Serial and Parallel Card.

- If you want to install a PC Serial and Parallel Card, you need to connect the peripheral flex cable to your PC Compatibility Card now. See the PC Serial and Parallel Card manual for instructions. Then return to this manual and go on to the next section, “Inserting the PC Compatibility Card.”
- If you don’t want to install a PC Serial and Parallel Card, go on to the next section.

Inserting the PC Compatibility Card

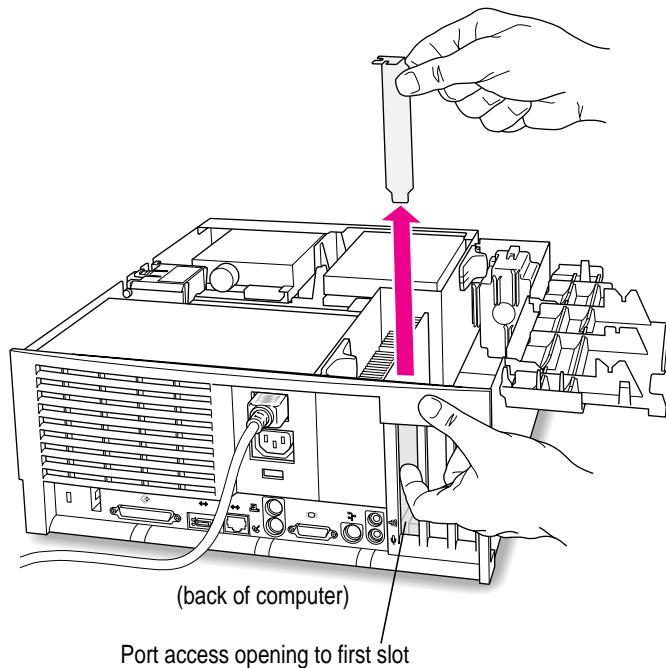
12 Prepare the first PCI expansion slot.

You need to install your PC Compatibility Card in the first PCI expansion slot, the slot closest to the center of the computer.

- If there is already a card in the first slot, move it to a different slot. If you will be installing a PC Serial and Parallel Card, you should also remove any card in the second slot (next to the first slot).

IMPORTANT Always hold PCI cards by their edges. Don't touch any of the components on the cards.

- If there is a port access cover installed, remove it.



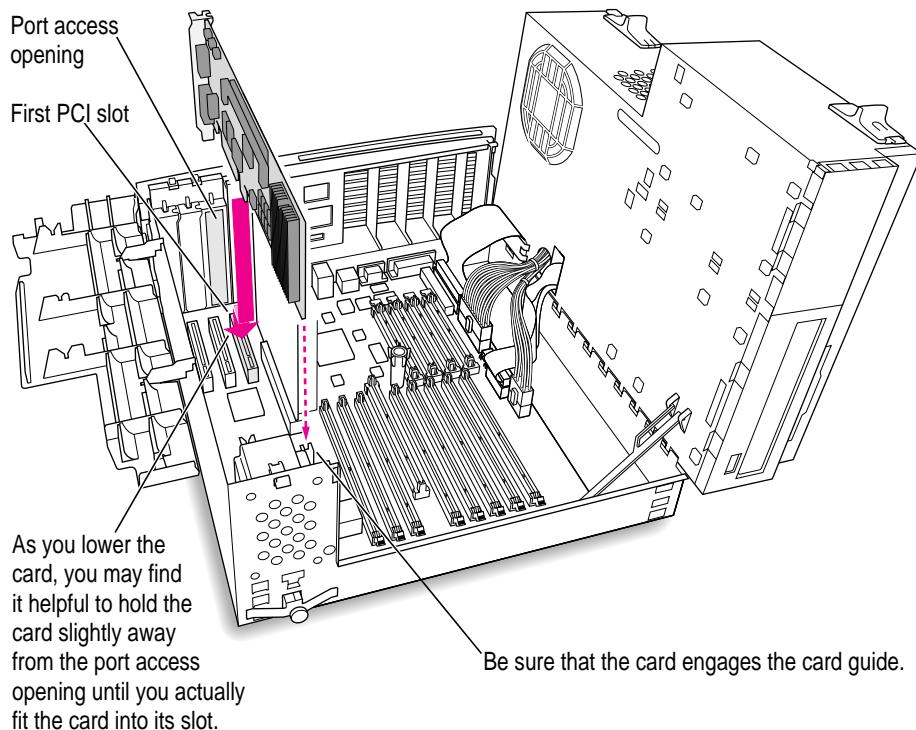
13 Align the card with the first expansion slot.

Align the card's connector end (gold in color) with the first PCI expansion slot. The ports on the card should face the port access opening on the computer's back panel.

14 Insert the card.

The end of the card should engage the card guide at the front of the computer. Press down on the card. When the card is fully inserted, you won't be able to see the gold-colored connector any more.

- Don't rock the card from side to side; press it straight into the slot. Rocking the card can damage the PCI slot.
- Don't force the card. If you meet a lot of resistance, pull the card out and try again.
- To see if the card is connected, pull it gently. If it resists, it is connected.

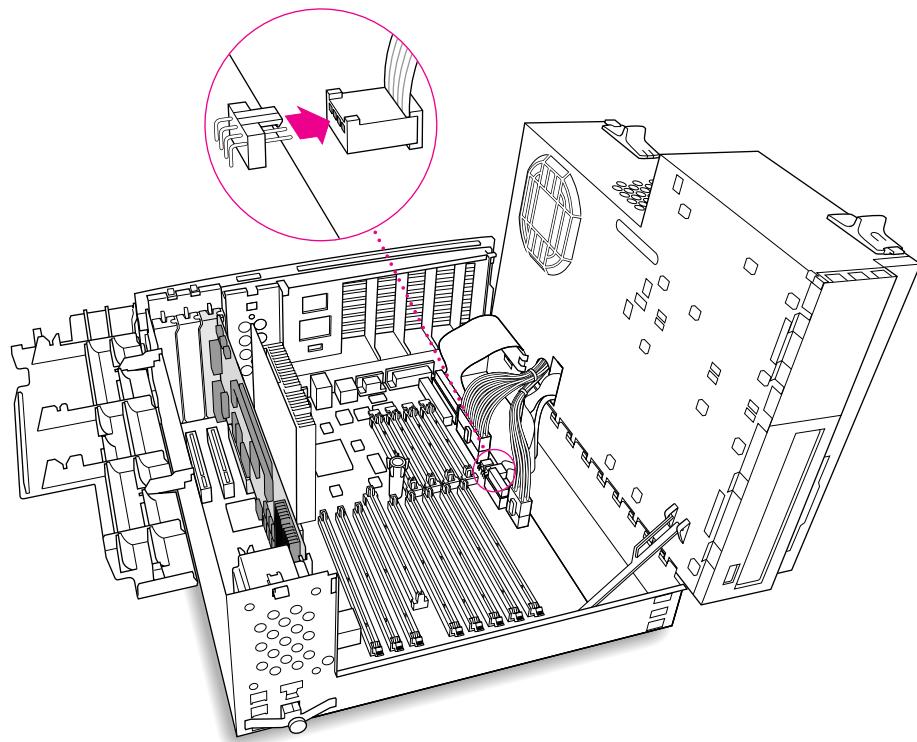


Connecting the Sound Out cable

- 15 Disconnect the audio ribbon cable from the Macintosh logic board.

This cable is connected near the DRAM DIMM slots. The connector has four pins and may be labeled “CD AUDIO” on the board.

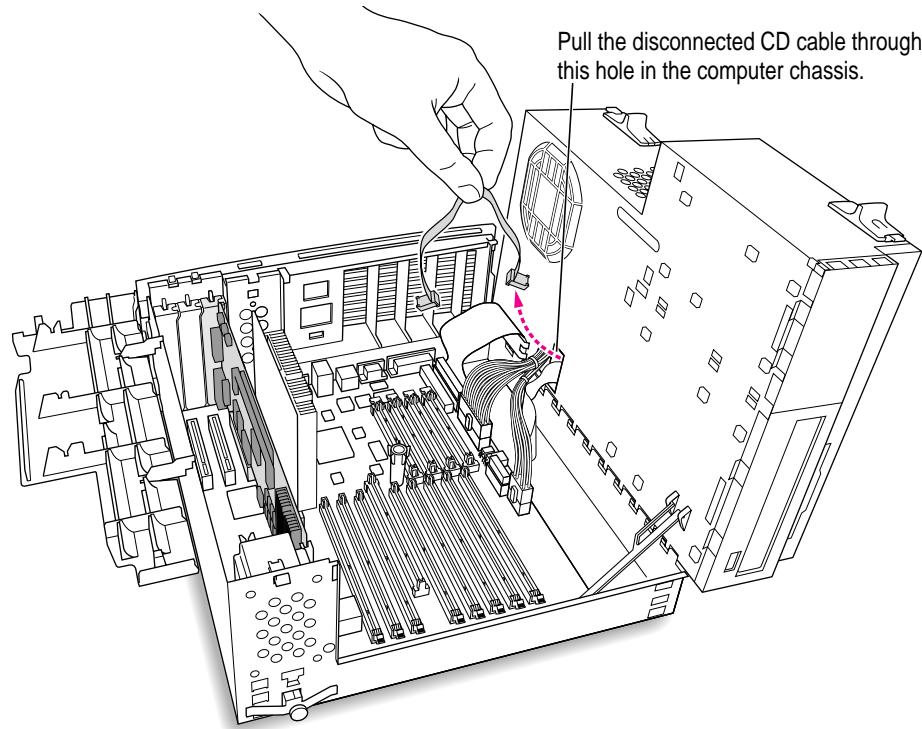
This is the same cable you disconnected from the CD-ROM drive in step 7. You will be replacing it with the cables that came installed with your PC Compatibility Card.



16 Pull the cable through the hole in the chassis and set it aside.

Don't force the cable. If it resists, jiggle it or feed it back through the hole and try pulling it loose again.

Keep this cable; you will need to reinstall it if you remove your PC Compatibility Card again.

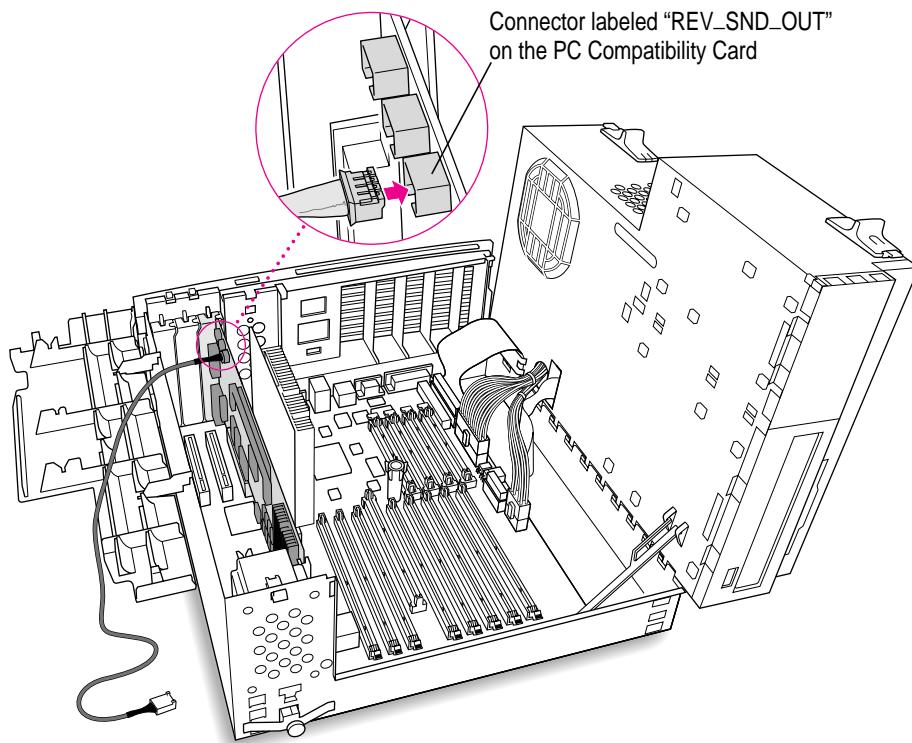


- 17** Plug one of the two identical SCSI audio cables into the connector labeled "REV_SND_OUT" (Reversed Sound Out) on the PC Compatibility Card.

The audio cables that came installed with your PC Compatibility Card may have different colors of tubing at the ends to help you tell them apart, but both cables work the same way.

IMPORTANT Use only the cables that came with this PC Compatibility Card. Do not use cables from other models of the card.

Insert the cable's smaller plug into the Reversed Sound Out connector. This connector is in the upper-left corner of the card, the third connector from the end.

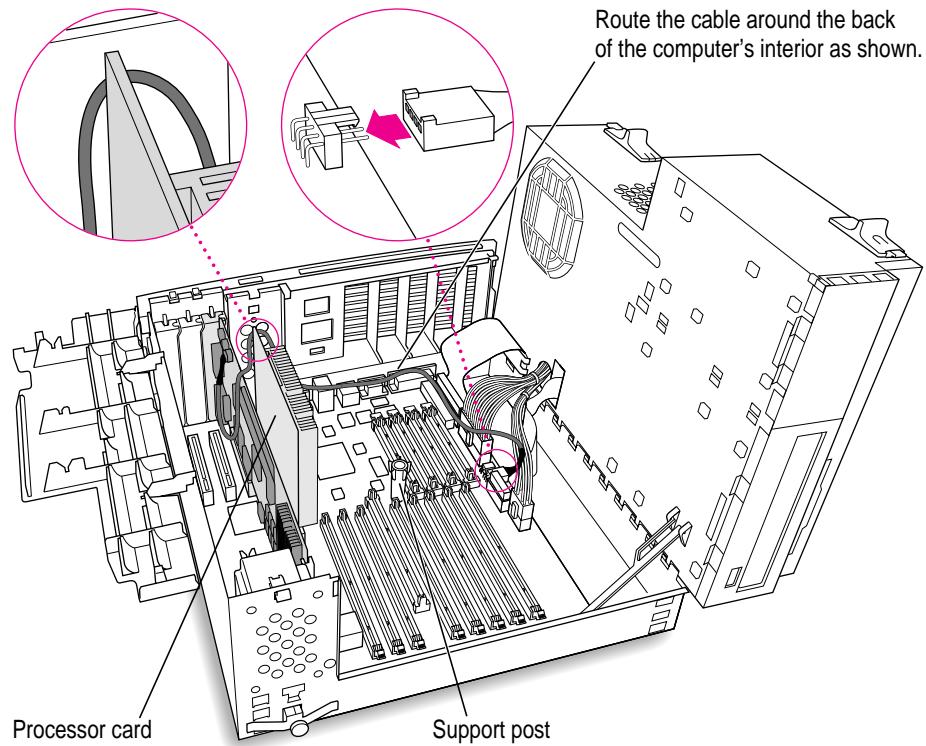


- 18** Route the cable over the top of the PC Compatibility Card, behind the processor card, and around the back of the Macintosh logic board. Then plug the cable into the audio connector on the logic board.

Be sure you route the cable between the processor card and the back panel (not over the top of the processor card).

Keep the cable away from the heat sink and center support post.

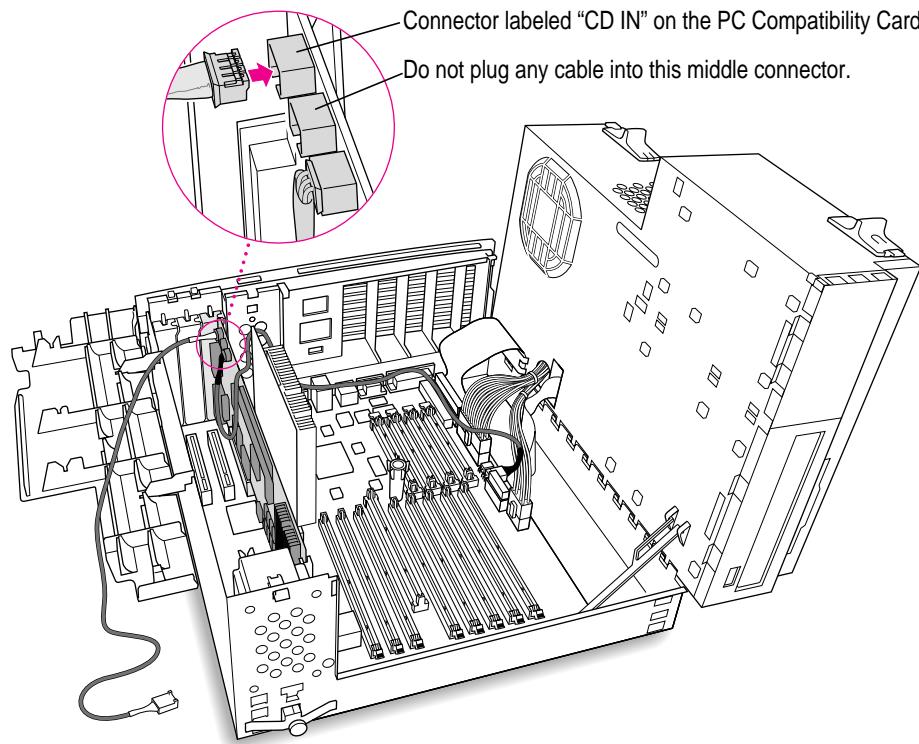
Insert the cable's larger plug into the CD audio connector on the logic board, where you unplugged the ribbon cable in step 15.



Connecting the CD In cable to the card

- 19 Plug the other SCSI audio cable into the connector labeled “CD IN” on the far upper-left corner of the PC Compatibility Card.

Insert the cable’s smaller plug into the connector labeled “CD IN” on the PC Compatibility Card.

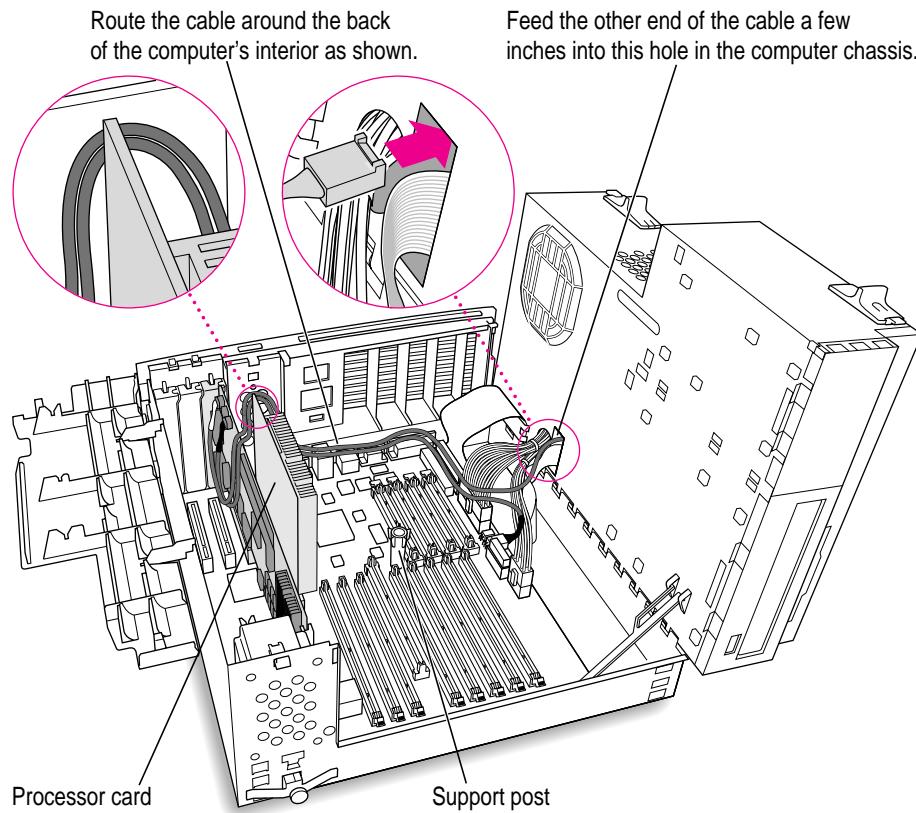


- 20** Route the second cable over the top of the PC Compatibility Card, behind the processor card, around the back of the logic board, and through the hole in the computer's chassis.

Be sure to route the cable between the processor card and the back panel (not over the top of the processor card).

Keep the cable away from the heat sink and the center support post.

You'll connect this cable to the CD-ROM drive in step 26.

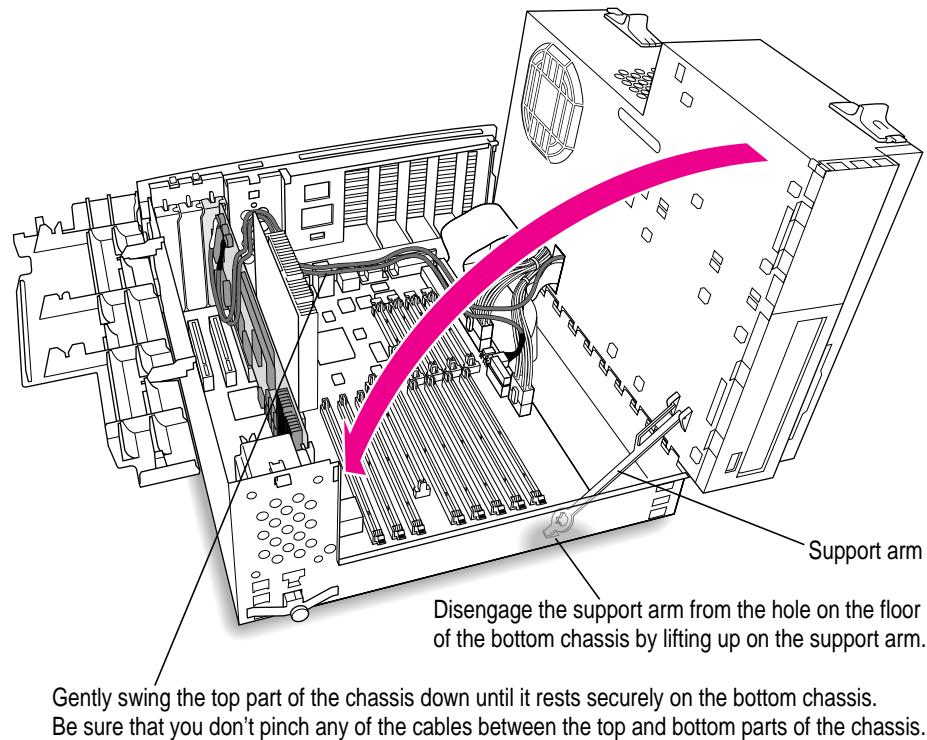


IMPORTANT If you are installing the PC Serial and Parallel Card, you should insert it now. See the PC Serial and Parallel Card manual for instructions.

Replacing the chassis and expansion card cover

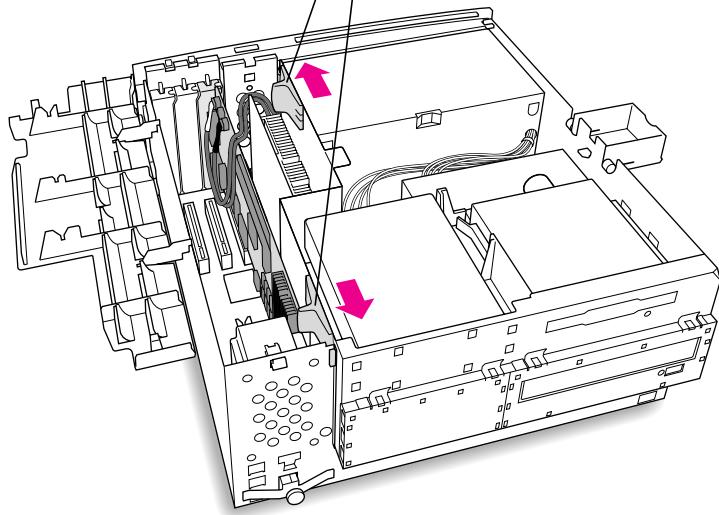
- 21** Make sure all cards and cables are firmly connected.
- 22** Disengage the support arm and swing the chassis down, without pinching any cables.

Make sure the cables you connected are away from the heat sink and center support post.



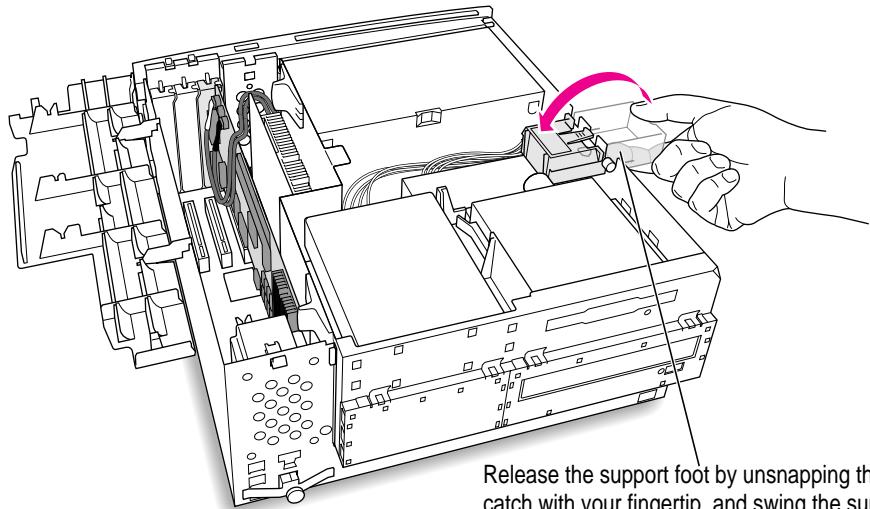
23 Lock the release switches.

Move the release switches toward the outside of the computer to lock the top chassis.



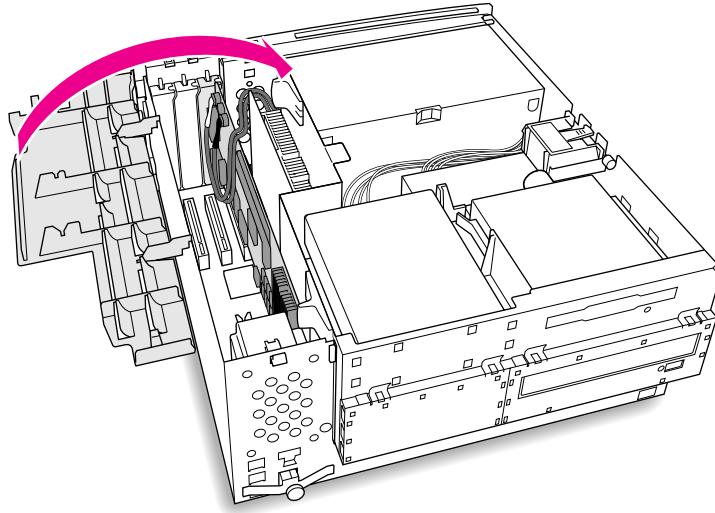
24 Replace the support foot.

Release the support foot by unsnapping the catch with your fingertip, and swing the support foot back inside the chassis.



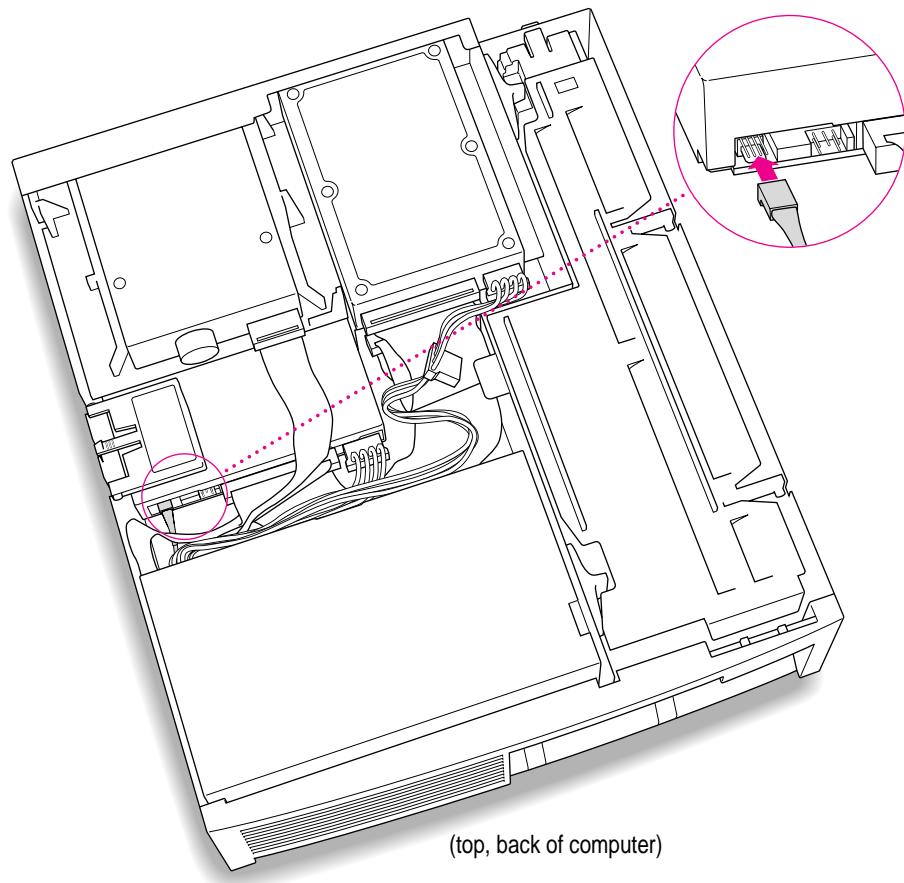
- 25** Flip the expansion card cover up and snap it back into place. (Be sure to snap the cover back down on both ends.)

If the cover doesn't snap into place easily, make sure no cables are in the way.



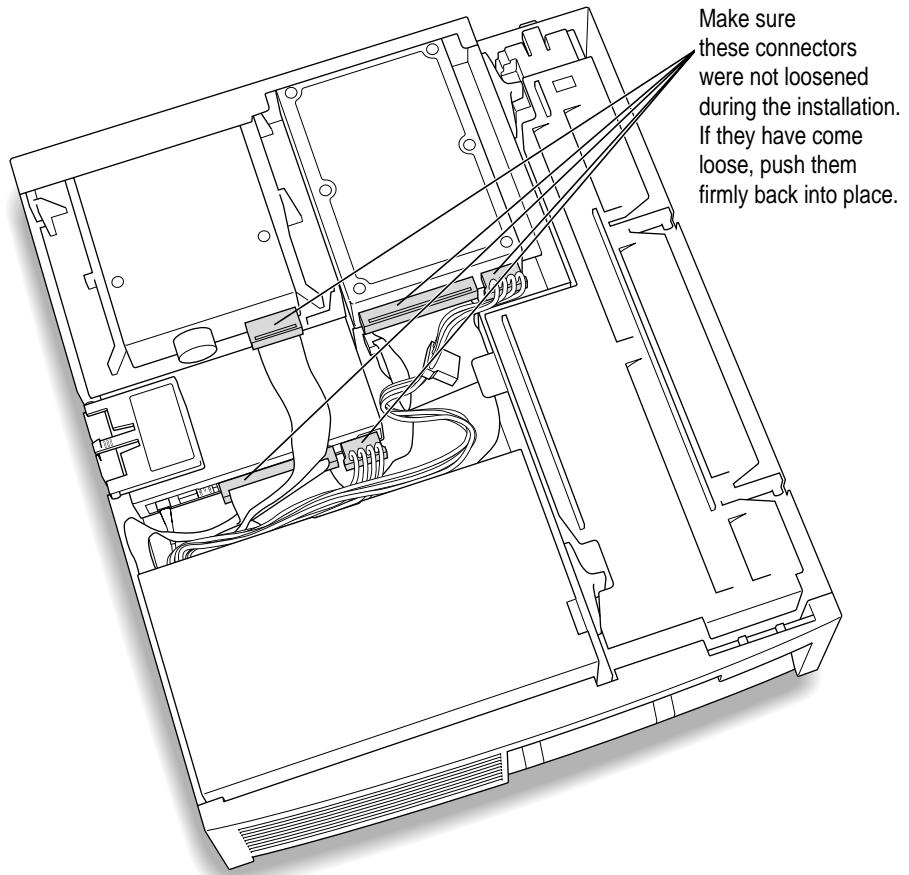
Connecting the CD In cable to the CD-ROM drive

- 26 Plug the audio cable you threaded through the computer's chassis (in step 20) into the back of the CD-ROM drive.

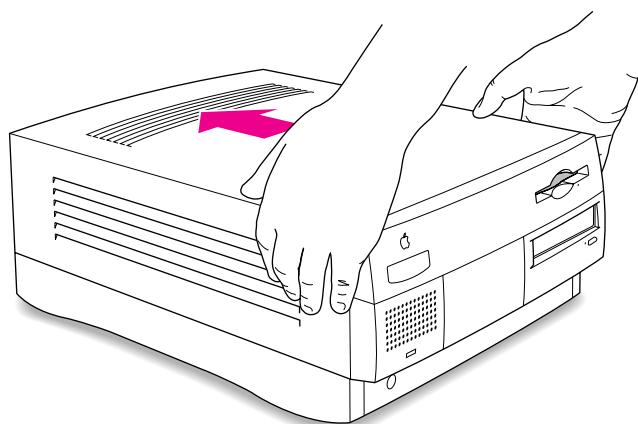
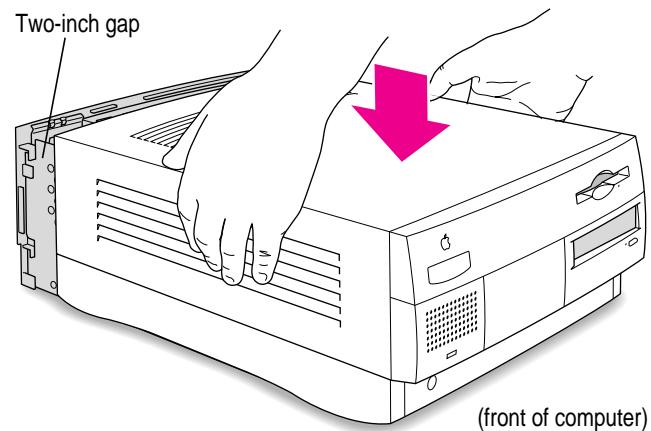


Replacing the computer's cover

- 27 Make sure all connectors are firmly attached.



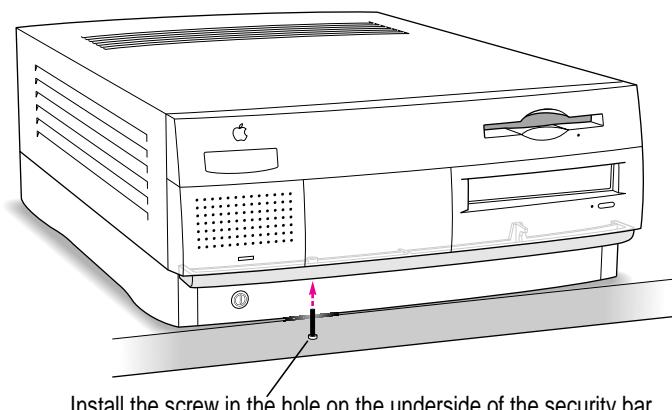
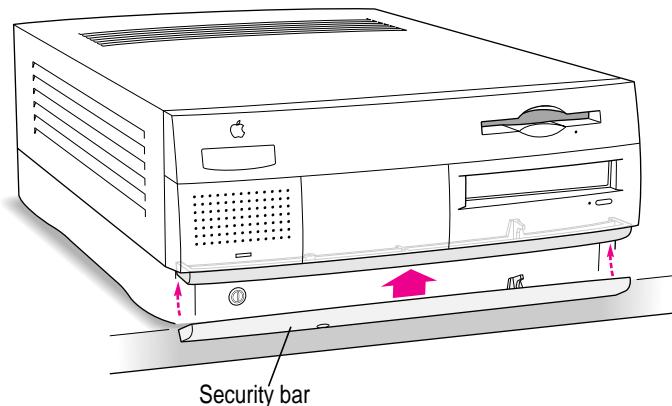
- 28** Lower the cover onto the case, leaving a two-inch gap, and then push the cover back.



29 If you removed the security bar earlier, replace it now.

Place the security bar under the front panel and tilt the bar so that the hook slides into the slot. Then reinsert the screw and tighten it into place.

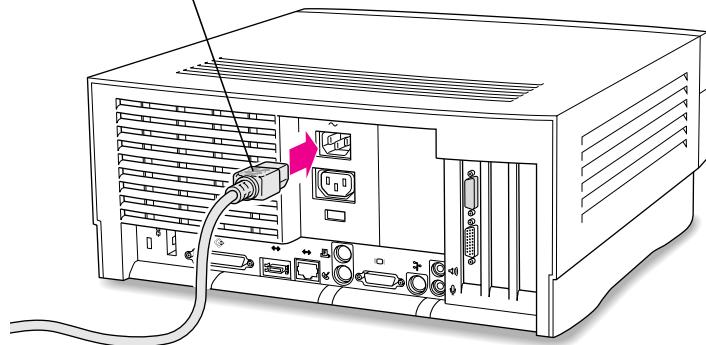
IMPORTANT Do not overtighten the screw.



30 Reconnect all equipment.

Reinsert the power cable and all other equipment cables.

Plug the power cord into the back of the computer.



You are now finished reinstalling the card. To learn how to reconnect your monitors and other equipment, see Chapter 1.

Appendix C

Adding Memory to Your PC Compatibility Card

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Your PC Compatibility Card comes with RAM (random-access memory) already installed. You can increase the memory available to the card by installing a DIMM (dual inline memory module) in the DIMM socket. Memory you add to the card is for the exclusive use of your PC operating system and may improve the performance of your PC software.

The DIMM socket accepts an 8, 16, 32, or 64 MB 60 ns, 5-volt DIMM. You may use either EDO or fast-page mode memory.

WARNING The installation of the memory is technically complex. Unless you are comfortable installing components inside computers, Apple recommends that you have memory added by your Apple-authorized dealer (who may charge a fee). If you attempt to add memory yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer.

Do not attempt to remove the card, add memory, install the card, or connect the cables without first reading this manual.

Installing memory on the card involves the following steps:

- removing the card
- installing the new DIMM
- reinstalling the card

WARNING Your PC Compatibility Card contains one socket for additional video RAM. To avoid damage to your computer, Apple recommends that you have your Apple-authorized dealer install additional video RAM (for a fee). If you attempt to install additional video RAM yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer. See an Apple-authorized dealer or service provider for additional information about this or any other warranty question.

Removing the card

1 Open the computer.

IMPORTANT For detailed instructions on opening your Power Macintosh 7300 computer, including important precautions, see Appendix B. To learn how to open your Power Macintosh 4400 computer, see the *PC Compatibility Card Update* that came with your computer.

2 Remove any cables from the PC Compatibility Card ports.

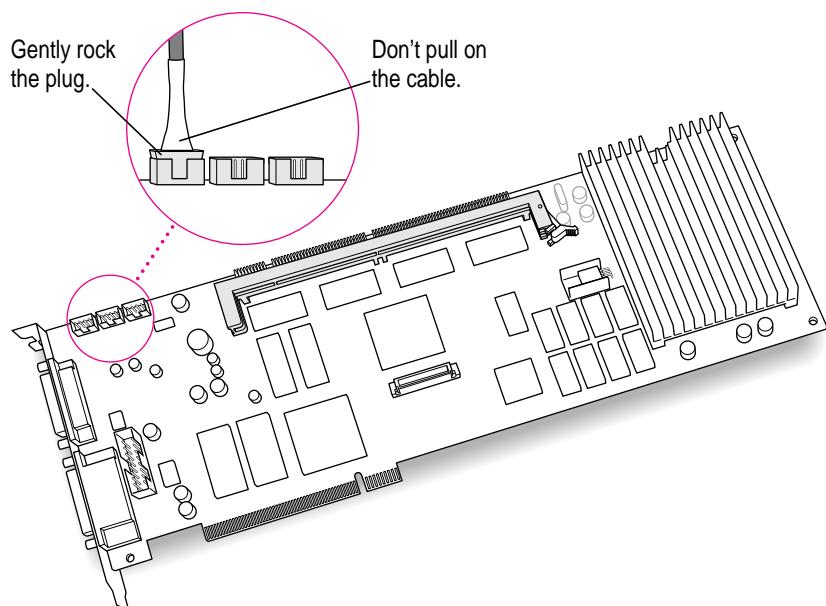
If you have not already done so, remove the loopback cable, and the PC game controller cable (if one is attached), from the ports on the back of the PC Compatibility Card.

3 If necessary, disconnect the audio cables from the PC Compatibility Card.

Because the audio cables can be difficult to remove, it's best to leave them connected if possible. If you feel you can pull the card out and access the DIMM slot without disconnecting the audio cables, leave the cables in place.

Otherwise, make a note of where the audio cables are connected so you'll know where to reconnect them later. Then grasp the side of each plug and pull firmly. Be sure to pull the plug, not the cable. It may help to gently rock the plug from side to side as you pull.

IMPORTANT Do not pull on or move the cables themselves. They are routed under the chassis in a specific way.



Do not attempt to use pliers to remove these plugs; you may damage the plugs or your card.

- 4 If you have installed a PC Serial and Parallel Card, unplug the peripheral flex cable (the cable that connects the two cards) from your PC Compatibility Card.
- 5 Grasp the PC Compatibility Card by its sides (without touching any components on the card) and pull it straight out of the slot.

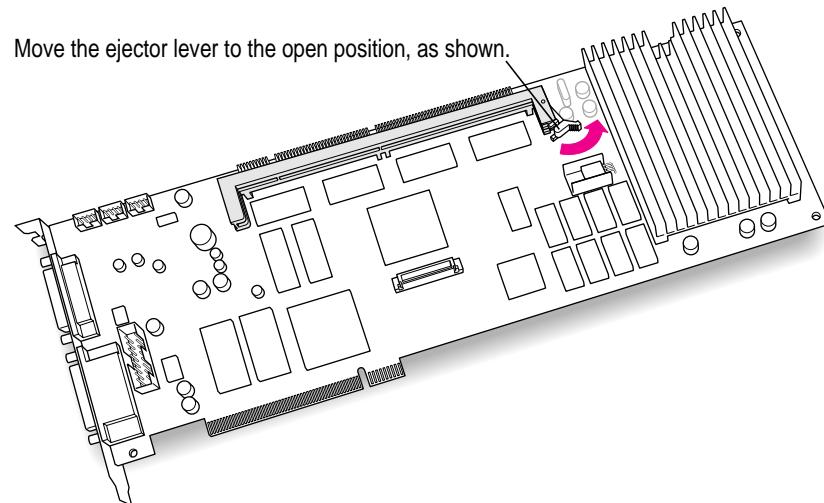
IMPORTANT Do not rock the card side to side as you remove it. Doing so may break the card or damage the slot.

Installing the new DIMM

- 1 Remove the DIMM from its static-proof bag.

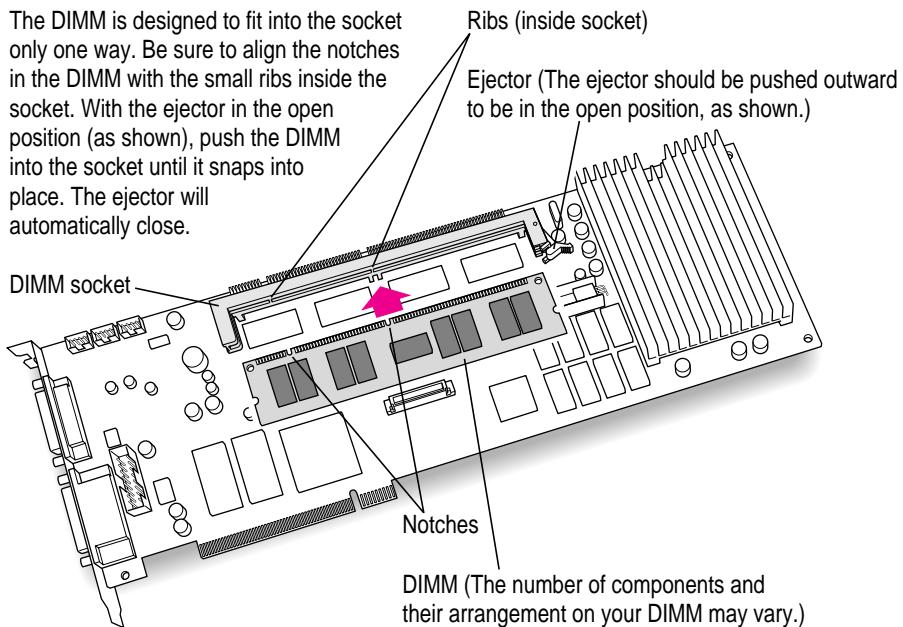
Handle the DIMM by its edges. Avoid touching the connectors.

- 2 Make sure the DIMM lever is in the open position.



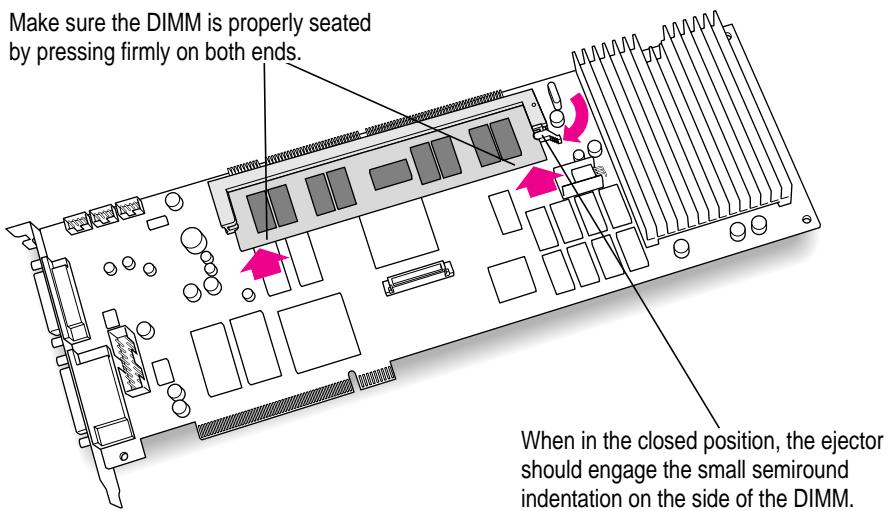
3 Push the DIMM into the DIMM slot until the lever snaps into the closed position.

The DIMM is designed to fit into the socket only one way. Be sure to align the notches in the DIMM with the small ribs inside the socket. With the ejector in the open position (as shown), push the DIMM into the socket until it snaps into place. The ejector will automatically close.



4 Make sure the DIMM is snapped into place on both ends.

Make sure the DIMM is properly seated by pressing firmly on both ends.



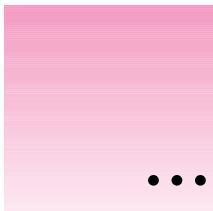
Reinstalling the card

For more detailed instructions on reinstalling the card into your Power Macintosh 7300 computer, see Appendix B. For detailed reinstallation instructions for your Power Macintosh 4400 computer, see the *PC Compatibility Card Update* that came with your computer.

- 1 Insert the card into the slot you removed it from.**
- 2 Reconnect the cables to the card as they were before you removed them.**
- 3 Make sure the cables are routed correctly (see Appendix B, step 20).**
- 4 Replace the computer cover.**
- 5 Reconnect the equipment cables to the card ports.**

IMPORTANT Make sure you connect your monitor and PC game controller to the correct ports on the PC Compatibility Card. (See Chapter 1 for more information.)

Your PC Compatibility Card is now fully installed with extra memory and is ready to use.



Appendix D

Installing Network Client Software

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The PC Compatibility Card supports network drivers that conform to Novell's Open Data-Link Interface (ODI) and Microsoft's Network Driver Interface Specification (NDIS) version 2.0. This appendix describes how to install and configure a variety of network protocol software and client software.

Use this appendix as a supplement to the documentation that came with your network software. If your configuration still doesn't work after following the instructions in this appendix, contact the manufacturer of your network software.

Throughout the process of installing network software, remember the four following items:

- You must run SETNET every time you add or remove a network protocol, install or upgrade network software, or change anything in the network control panel. If you do not run SETNET, you will experience network problems.
- When you install a NetWare client, install it under the NWCLIENT directory. Otherwise, the SETNET program will not work with ODI and your networking software will not work correctly.
- Use the MACODI.COM and MACNDIS.DOS driver found on the *PC Compatibility Card–PC Utilities* CD when installing network protocols for the PC Compatibility Card. Do not use any of the drivers that ship with Windows 95.
- When using the MACODI.COM driver, use the latest LSL driver (2.21 or later), available from the Novell Web site at <http://www.novell.com>.

This appendix contains instructions for installing and setting up the following network software combinations:

ODI driver with the following protocols

- NetBEUI and IPX/SPX in Windows 95
- TCP/IP in Windows 95

NDIS 2.0 driver with the following protocols

- NetBEUI and IPX/SPX in Windows 95
- Microsoft's TCP/IP and IPX/SPX in Windows 95

Configuring the built-in TCP/IP Stack for PPP (modem) in Windows 95

If you are installing a protocol for use with an ODI driver, see “Installing Protocols for Use With Open Data-Link Interface (ODI),” next. If you are installing a protocol for use with an NDIS 2.0 driver, see “Installing Protocols for Use With Network Driver Interface Specification (NDIS) 2.0,” later in this appendix.

Installing protocols for use with Open Data-Link Interface (ODI)

Before you install a protocol for use with ODI, follow the instructions in this section to install the appropriate NetWare client software. Then refer to the instructions later in this section that describe installing and setting up the network protocol you want to use.

You need to know the Ethernet frame type in use on your network segment. Your network administrator can give you this information.

Installing NetWare client software version 1.02 for Windows 95

The NetWare client software that's installed under Windows 95 can use either the NDIS or ODI driver (unlike Windows for Workgroups and DOS, where only the ODI driver can be used). The following steps describe how to install a NetWare client under Windows 95 using the ODI driver.

- 1 Switch to the PC environment and start Windows 95.
- 2 In Windows 95, click Start and then select Shutdown from the menu that appears.

- 3** In the window that appears, select “Restart the computer in MS-DOS mode.”
- 4** Insert the *NetWare Client Kit Disk 1* into the disk drive.
- 5** To switch to the disk, type the following:
A: <return>
- 6** To start the installation process, type the following:
INSTALL <return>
- 7** Follow the instructions on screen for steps 1–3. Then select step 4 and press Return.
A list of network interface controller (NIC) drivers appears.
- 8** Eject the NetWare floppy disk by pressing ⌘-E .
- 9** Insert the *PC Compatibility Card–PC Utilities CD* and press Return.
The MACODI.COM driver is located in the \Apple directory on the *PC Compatibility Card–PC Utilities CD*.
- 10** From the list of choices, select “PC Compatibility Ethernet Adapter” and press Return.
- 11** When installation is complete, return to Windows 95 by typing the following:
EXIT <return>
- 12** When Windows 95 restarts, you see an error message. Press Return.
The error message is
C:\windows\system\vmm32\vnetbios.VXD does not exist
- 13** Click Start, choose Settings from the menu that appears, and then select Control Panel.
- 14** Double-click the Network icon to open it.
- 15** Select Add in the Network control panel.
- 16** Select the Adapter Component in the Network Component list and then click Add.
- 17** Under Manufacturers, select “(detected net drivers).”

- 18** Under Network Adapters, select Existing ODI Driver and click OK.

Configuration takes about 30 seconds. When it's finished, the Network Configuration lists the following:

Client for Microsoft Networks
Client for Novell Networks
Existing ODI Driver
IPX/SPX-Compatible Protocol
NetBEUI

- 19** To share your printers or files with other users on the network, select "File and Print Sharing."

Click the checkboxes to turn on file or printer sharing. Then click OK.

- 20** If file or printer sharing has been selected, the following line is added to the Network Configuration Box:

File and printer sharing for Microsoft Networks

- 21** Select the Identification tab.

The computer must have a unique identity to access the network.

- 22** In the window that appears, type the following information and then click OK:

- a unique name for the computer
- a workgroup for the computer (typically WORKGROUPS)
- a description to identify the computer (optional)

- 23** Click the OK button at the bottom of the configuration box when you are finished.

- 24** When prompted, insert the *Windows 95 CD* into the CD-ROM drive.

- 25** You are asked if you want to restart your computer. Select No.

- 26** Eject the *Windows 95 CD* and then insert the *PC Compatibility Card-PC Utilities CD* into the CD-ROM drive.

- 27** Click Start and choose Run from the menu that appears.

- 28** In the dialog box that appears, type
E:\APPLE\SETNET <return>
- 29** Select the following items and then click OK:
- ODI radio button
 - IPX/SPX checkbox
 - Ethernet_802.2 radio button
 - NETBEUI checkbox
- 30** Close the control panel and remove the *PC Compatibility Card–PC Utilities* CD from the CD-ROM drive.
- 31** Click Start and then choose Shutdown from the menu that appears.
- 32** Restart the PC.
- 33** You see a message warning of an invalid NetWare command. Select Yes.
- 34** In the Login dialog box, enter your user ID.
- 35** Press Tab, enter your password, and click OK.

A dialog box appears asking to save your password. To save the password, reenter the password and then click OK. If you don't want to save the password, select Cancel.

- 36** To view other servers on the network, double-click the Neighborhood Network icon on the Windows 95 desktop.

Your computer scans for other machines on the network.

Installing NetBEUI and IPX/SPX in Windows 95

NetBEUI and IPX/SPX are automatically installed as part of the standard NetWare client software version 1.02 installation. Refer to the section “Installing NetWare Client Software Version 1.02 for Windows 95,” earlier in this appendix.

Installing Client 32 for Windows 95

This section describes how to install Client 32 for Windows 95. Client 32 is installed on top of the existing NetWare version 1.02.

1 Install NetWare Client version 1.02 for Windows 95.

To install NetWare version 1.02 for Windows 95, follow the steps in the section “Installing NetWare Client Software Version 1.02 for Windows 95,” earlier in this appendix.

2 Follow the onscreen instructions.

3 When prompted for a driver, select “Existing ODI Driver.”

4 When installation is complete, restart Windows 95.

Installing TCP/IP in Windows 95

This section describes how to install the TCP/IP protocol for use with an ODI driver in Windows 95. If you are using NDIS 2.0, refer to this topic in “Installing Protocols for Use With Network Driver Interface Specification (NDIS) 2.0,” later in this appendix.

1 Install the NetWare client software.

For more information, see the appropriate section on installing NetWare client software earlier in this appendix.

2 In Windows 95, click the Start button, choose Settings, and then choose Control Panel.

3 Double-click the Network icon in the Control Panel.

4 Click Add in the Network Configuration dialog box.

5 Select Adapter Component from the Network Component list and click Add.

- 6** In the Manufacturers list, select “(detected net drivers).”
 - 7** In the Network Adapters list, select Existing ODI Driver, and then click OK.
- The Network Configuration dialog box appears.
- 8** Click Add.
 - 9** Double-click the Protocol icon.
 - 10** In the Manufacturers area, select Microsoft. In the Network Protocols area, select TCP/IP.
 - 11** To share files or your printer with other users on the network, click the “File and Print Sharing” button.
 - 12** Select the checkboxes in the dialog box to enable file or printer sharing. Then click OK.
- If file or printer sharing has been selected, “File and printer sharing for Microsoft Networks” appears in the Network Configuration dialog box.
- 13** Select the Identification tab at the top of the Network Configuration dialog box.
 - 14** Type a unique name, a workgroup name, and any description you would like for the computer.
- The computer must have a unique name to access the network. The workgroup name is usually “WORKGROUPS.”
- 15** Click OK.
 - 16** Insert the *Windows 95* CD when prompted to do so.
 - 17** When the System Settings Change dialog box prompts you to restart your computer, click No.
 - 18** Go to “Running the Network Protocol Setup (SETNET) Utility,” near the end of this appendix, and follow the instructions there.

WARNING You must run SETNET every time you add or remove a network protocol, install or upgrade network software, or change anything in the network control panel. If you do not run SETNET, you will experience network problems.

Installing protocols for use with Network Driver Interface Specification (NDIS) 2.0

Installing NetBEUI and IPX/SPX in Windows 95

This section describes how to set up the NetBEUI and IPX/SPX protocols for use with an NDIS driver in Windows 95. If you are using ODI, refer to this topic in “Installing Protocols for Use With Open Data-Link Interface (ODI)” earlier in this appendix.

- 1** In Windows 95, click Start, choose Settings, and then choose Control Panel.
- 2** Double-click the Network icon to open it.
- 3** Select Add; then select Adapter.
- 4** Select Have Disk.
- 5** Insert the floppy disk containing the NDIS 2.0 driver. Verify the drive; then click OK.
- 6** You see the message “PC Card Network Driver (NDIS2).” Click OK.

The following network items will be automatically installed:

- Client for Microsoft Networks
- Client for NetWare Networks
- PC Card Network Driver (NDIS2)
- IPX/SPX-compatible Protocol
- NetBEUI

- 7** Choose any custom settings you need (for example, enable file sharing).
- 8** Select Identification. Fill in the boxes labeled “Computer Name,” “Workgroups,” and “Computer Description.” Then click OK.
- 9** Insert the *Windows 95 CD* when prompted to do so.

Windows 95 will install all the necessary network components.

- 10** Go to “Running the Network Protocol Setup (SETNET) Utility” near the end of this appendix and follow the instructions there. Then return to this section.

WARNING You must run SETNET every time you add or remove a network protocol, install or upgrade network software, or change anything in the network control panel. If you do not run SETNET, you will experience network problems.

- 11 After running SETNET, make sure your PROTOCOL.INI file contains the following:

PROTOCOL.INI

```
[NDISHLP$]
  DRIVERNAME=NDISHLP$
  BINDINGS=MACNDIS$

[PROTMAN$]
  DRIVERNAME=PROTMAN$
  PRIORITY=NDISHLP$

[DATA]
  VERSION=v4.00.950
  NETCARDS=MACNDIS$, MACNDIS

[NETBEUI$]
  DRIVERNAME=NETBEUI$
  LANABASE=0
  SESSIONS=10
  NCBS=12
  BINDINGS=MACNDIS$

[NWLINK$]
  DRIVERNAME=NWLINK$
  FRAME_TYPE=4
  CACHESIZE=0
  BINDINGS=MACNDIS$

[MACNDIS$]
  DRIVERNAME=MACNDIS$
  PROTOCOLDOT2="F0,E0,FF"
```

- 12 Shut down Windows 95.
13 Switch to the Mac OS by pressing ⌘-Return .
14 Click Restart PC in the PC Setup control panel.

Installing Microsoft TCP/IP-32 IP protocol stack in Windows 95

This section describes how to set up the Microsoft TCP/IP-32 IP protocol for use with an NDIS driver in Windows 95.

This section assumes that you are installing only the Microsoft TCP/IP protocol. If you want to install additional protocols, you must modify the PROTOCOL.INI file accordingly. The SETNET utility can add this information for you.

- 1 Start Windows 95.**
- 2 In Windows 95, click Start, choose Settings, and then choose Control Panel.**
- 3 Double-click the Network icon to open it.**
- 4 Select Add; then select Adapter.**
- 5 Select Have Disk.**
- 6 Insert the floppy disk containing the NDIS 2.0 driver. Verify the drive; then click OK.**
- 7 You see the message “PC Card Network Driver (NDIS2).” Click OK.**

The following network items will be automatically installed:

- Client for Microsoft Networks
- Client for NetWare Networks
- PC Card Network Driver (NDIS 2.0)
- IPX/SPX-compatible Protocol
- NetBEUI

- 8 Choose any custom settings you need (for example, enable file sharing).**

If you want to install only the TCP/IP protocol, remove the other protocols after you have installed the TCP/IP protocol stack.

- 9 Click Add; then click Protocol; then click Add. Under Manufacturers, select Microsoft. Under the Network Protocols, double-click TCP/IP.**
- 10 Enter all the necessary information to configure the TCP/IP stack. Double-click the TCP/IP protocol under the “PC Card Network Driver (NDIS2)” and enter the necessary information.**

- 11** Refer to “Running the Network Protocol Setup (SETNET) Utility,” next, and follow the instructions there.

WARNING You must run SETNET every time you add or remove a network protocol, install or upgrade network software, or change anything in the network control panel. If you do not run SETNET, you will experience network problems.

- 12** After running SETNET, make sure your PROTOCOL.INI file contains the following (assuming TCP/IP is the only loaded protocol):

PROTOCOL.INI

```
[ndishlp$]
  DriverName=ndishlp$
  Bindings=MacNDIS$

[protman$]
  DriverName=protman$
  priority=ndishlp$

[data]
  version=v4.00.950
  netcards=MacNDIS$, MacNDIS

[MacNDIS$]
  DriverName=MacNDIS$
  ProtocolDIX="800,806,8035"
```

- 13** Shut down Windows 95.
14 Switch to the Mac OS by pressing **⌘-Return**.
15 Click **Restart PC** in the **PC Setup** control panel.

Running the Network Protocol Setup (SETNET) utility

A PC-compatible Macintosh allows you to connect to more than one network at a time, one in the PC environment and one in the Mac OS environment.

The Network Protocol Setup (SETNET) utility helps configure your PC networking setup files (such as NET.CFG and PROTOCOL.INI) to distinguish between information sent to the network selected in the Mac OS environment and information sent to the network in the PC environment.

Before running SETNET, you must have installed network driver and protocol software according to the instructions earlier in this appendix.

WARNING You must run SETNET every time you add or remove a network protocol, install or upgrade network software, or change anything in the network control panel. If you do not run SETNET, you will experience network problems.

IMPORTANT If you are using ODI with Windows 95, you may need to manually add the following two lines to your PROTOCOL.INI file before running the SETNET utility.

```
[NET.CFG]  
PATH=C:\NWCLIENT\NET.CFG
```

- 1 In Windows 95, click Start, and choose Run from the menu that appears.

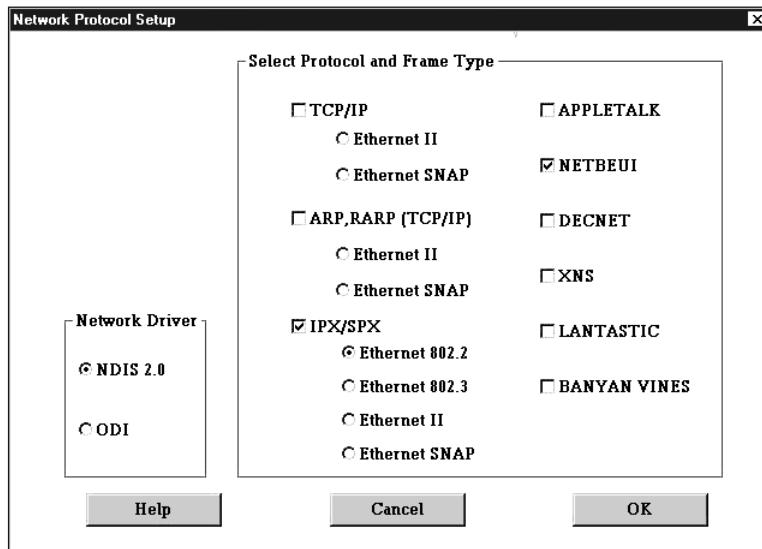
A dialog box appears.

- 2 Insert the *PC Compatibility Card–PC Utilities CD* into the CD-ROM drive.

3 Type the following:

```
E:\APPLE\SETNET.EXE <return>
```

The Network Protocol Setup dialog box appears.



You do not need to select an option in the Network Driver area. The SETNET utility automatically detects the network driver you installed.

4 Select one or more network protocols that you installed by clicking checkboxes in the "Select Protocol and Frame Type" area.

You can select more than one protocol if you have installed more than one. If you are only using one protocol, be sure to select its checkbox and leave the other checkboxes unselected.

5 If you are using TCP/IP, ARP, RARP (TCP/IP), or IPX/SPX, select the appropriate frame type for each selected protocol by clicking the buttons in the "Select Protocol and Frame Type" area.

6 Click OK.

7 Shut down Windows 95.

8 Switch to the Mac OS by pressing $\text{⌘}-\text{Return}$.

- 9** Shut down the PC by clicking Shut Down PC in the PC Setup control panel.
- 10** Shut down the Macintosh, wait ten seconds, and start up the Macintosh again.

You need to shut down the Macintosh and start it up again to make sure that the network software is installed properly.

Configuring the built-in TCP/IP stack for PPP (modem) in Windows 95

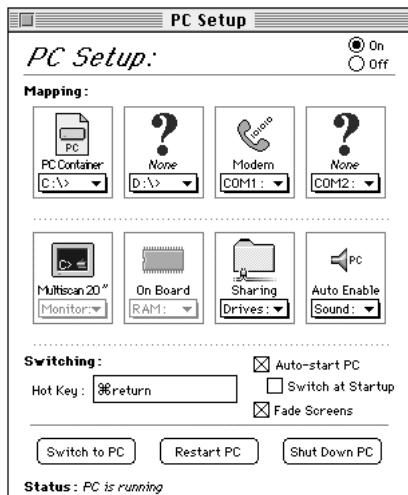
The following instructions assume that this is the first time you are installing the Point-to-Point (PPP) software and no previous networking software has been installed.

Using a modem connected to the Macintosh serial port

Note: The following example describes connecting a Macintosh modem to the Macintosh modem port and then configuring it to be COM1 in the PC environment. A modem can be connected to either the Macintosh modem port or printer port and can be configured to COM1 or COM2 in the PC environment.

- 1** With your computer turned off, connect a modem to the modem port on the back of your computer.
- 2** Start up the Mac OS.
- 3** Open the PC Setup control panel.

- 4 Open the COM1 menu and choose Modem Port.



- 5 Switch to the PC environment.

Installing a modem in Windows 95

- 1 In Windows 95, click Start, choose Settings, and then choose Control Panel.
- 2 Double-click the Modem icon.
- 3 Click Next to allow Windows 95 to autodetect the modem. If you are not using a PC modem, click “Don’t detect my modem; I will select it from a list”; then click Next. In the next window, choose the modem that is similar to your own.

If Windows 95 does not autodetect your PC modem, check with your modem’s manufacturer for driver information.

- 4 From the list of available ports, choose Communications Port (COM1); then click Next.

This step is needed only if Windows 95 did not autodetect your modem.

- 5 Enter the modem information and then click Next.

Windows 95 installs the appropriate modem driver. The Modem Properties window appears.

- 6 Click Finish.

- 7** Click Diagnostics; then select the COM port that the modem is attached to (COM1).
- 8** Click More Info to show the characteristics of your modem; then click OK.
- 9** Click General and then click Properties to display the properties for your modem.
- 10** Click Connection; then click Advanced.
- 11** Make sure that the flow control and hardware handshaking options are checked. Click OK until you get back to the Modem Properties window.
- 12** Click Close to complete the setup process.

Dial-up networking installation

- 1** In Windows 95, click Start, choose Settings, and then choose Control Panel.
- 2** Double-click the Add/Remove Programs icon.
- 3** Click the Windows Setup tab.
- 4** Double-click Communications.
- 5** In the window that appears, place a check next to Dial-Up Networking and then click OK.
- 6** Click OK again to start the installation process.

If the Windows 95 disc is not in the CD-ROM drive, you are asked to insert it.

- 7** After the installation process is complete, restart Windows 95.
- 8** In Windows 95, click Start, choose Settings, and then choose Control Panel from the menu that appears.
- 9** Double-click the Network icon.

Now the TCP/IP protocol needs to be installed in order to access the Internet and other TCP/IP networks.

- 10** In the Network window, click Add.
- 11** From the list of available components, select Protocol; then click Add.
- 12** In the window that appears, choose Microsoft from the list of manufacturers. Then choose TCP/IP from the list of network protocols.
- 13** Click OK to return to the Network window.
- 14** Double-click TCP/IP in the list of installed network components.
- 15** In the window that appears, configure the TCP/IP stack by filling in the appropriate information. When you are finished, click OK.
- 16** Follow the instructions on the screen to finish the installation, and then restart Windows 95.

Making a PPP connection

- 1** In Windows 95, click Start, choose Programs, choose Accessories, and then choose Dial-Up Networking from the menu that appears.
- 2** Double-click Make New Connection.
- 3** Follow the instructions on screen to finish the procedure.

Consult your Windows 95 manual for more information about establishing a PPP connection.



Appendix E

Configuring Video Software

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This appendix describes special configuration options for the ATI video circuitry and ATI video drivers that came with your PC Compatibility Card.

About video capabilities

The PC Compatibility Card comes with ATI video circuitry and an ATI mach64 graphics accelerator, providing high-performance 64-bit graphics, and acceleration up to 16.7 million colors (at a resolution of 800 x 600), or up to 1280 x 1024 resolution (with 256 colors). Availability of colors and resolutions depends on the monitor connected, the type of chip, and the amount of video memory installed.

The video circuitry is initially configured to display basic VGA at a resolution of 640 x 480. If you have a multiple-scan monitor, you can configure the circuitry to provide the full range of resolutions and refresh rates that your monitor can support.

Your operating system may also provide utilities for installing and configuring enhanced drivers. Please refer to the documentation that came with your operating system for information.

Installing and configuring MPEG video support

For instructions on installing basic video software and selecting monitor types in Windows 95, see Chapter 2, “Installing the PC Compatibility Card Software,” and Chapter 3, “Setting Up the PC Environment.” This section provides information about installing MPEG video software in Windows 95.

Note: Not all of the features described in the ATI onscreen instructions are supported by the PC Compatibility Card.

Your video software includes the ATI Video Player—an MPEG player for Windows and Windows 95 that provides full-motion, full-screen, color MPEG video playback. You must install the enhanced video drivers before installing the ATI Video Player.

Installing MPEG video support in Windows 95

To install the MPEG video support, follow these steps:

- 1 Insert the *PC Compatibility Card–PC Utilities* CD into the CD-ROM drive.**
- 2 Click Start, then choose Run from the menu that appears.**
- 3 Type the following:**

```
E: \VIDEO\ATISETUP <return>
```

The ATI Setup Window appears.

- 4 Click ATI Video Player.**
- 5 Follow the setup instructions to complete the installation.**

Note: The ATI Installer looks for MPEG support software during the installation process. If the necessary software is not found, the Installer installs it and then restarts Windows 95. You will then need to repeat steps 1 through 5 in order to install the MPEG video support.

Optimizing MPEG playback in Windows 95

You have three ways to optimize MPEG file playback performance in Windows 95: you can adjust virtual memory, adjust CD-ROM caching, or adjust ATI MPEG Player settings. There is no single best way to configure the system. The instructions here describe where to find the configuration files you can use to optimize playback for your system.

To adjust virtual memory settings, follow these steps:

- 1 Click Start, choose Settings, and choose Control Panel.**
 - 2 Double-click the System icon to open it.**
 - 3 Click the Performance tab and click the Virtual Memory button.**
- The options in the Virtual Memory window allow you to let Windows 95 automatically manage your virtual memory or set up virtual memory yourself.
- 4 Click OK when you are finished and close all the open windows.**
 - 5 Shut down Windows 95 and restart the PC for your changes to take effect.**

To adjust CD-ROM caching settings, follow these steps:

- 1 Click Start, choose Settings, and choose Control Panel.**
- 2 Double-click the System icon to open it.**
- 3 Click the Performance tab and click the File System button.**
- 4 Click the CD-ROM tab.**
- 5 Decrease or increase the size of the Supplemental Cache to optimize performance.**
- 6 Choose the speed of your CD-ROM drive from the “Optimize access pattern for” pop-up menu.**
- 7 Click OK.**

To set ATI MPEG Player properties, follow these steps:

- 1 Click Start, choose Programs, and then choose ATI Multimedia.**
- 2 Double-click ATI Player.**
- 3 Follow the onscreen instructions.**

Video mode tables

This section describes the video mode specifications for ATI video drivers using DRAM.

When discussing color depth, 8 bits per pixel (8 bpp) is the same as 256 colors. Therefore, the relation between bpp and colors is as follows:

Bits per pixel	Number of colors
8	256
16	65,000
24	16,700,000
32*	16,700,000

*32 is 24-bpp color data processed using a 32-bpp data format.

The ATI video drivers also support 15 bpp (32,000 colors). Any resolution and refresh settings that support 16 bpp will support 15 bpp.

DRAM accelerator mode

The following table lists color depths and other features supported at various monitor resolutions in graphics mode. The settings listed in this table can be applied to multiscan monitors only.

Resolution	Refresh rate (Hz)	Horizontal frequency (kHz)	Pixel clock (MHz)	Maximum color depth (bpp)*
640 x 480	60	31.4	25.2	24, 32 [†]
	72	37.7	31.2	24, 32
	75	37.5	31.5	24, 32
	90	47.9	39.9	16, 32
	100	52.9	44.9	16, 16
	120	63.7	55.0	—, 16
800 x 600	48 interlaced	33.8	36.0	16, 24
	56	35.1	36.0	16, 24
	60	37.8	40.0	16, 24
	70	44.5	44.9	16, 32
	72	48.0	50.0	16, 16
	75	46.8	49.5	16, 16
	90	57.0	56.6	8, 8
	100	62.5	67.5	8, 8
	120	76	81	—, 8

*In the "Maximum color depth" column, the first number is the bits per pixel supported at 1 MB DRAM; the second number is the bits per pixel supported at 2 MB DRAM. A dash (—) means the color depth is not supported in that DRAM configuration.

[†]32 is 24-bpp color data processed using a 32-bpp data format.

continued ►

Resolution	Refresh rate (Hz)	Horizontal frequency (kHz)	Pixel clock (MHz)	Maximum color depth (bpp)*
1024 x 768	43 interlaced	35.5	44.9	8, 16
	60	48.3	65.0	8, 16
	70	56.4	75.0	8, 16
	72	58.2	75.0	8, 16
	75	60.0	78.8	8, 16
	90	76.2	100	—, 8
	100	79.0	110	—, 8
	120	96.7	130	—, 8
1152 x 864	43 interlaced	45.9	65.0	8, 16
	47 interlaced	44.8	65.0	8, 8
	60	54.9	80.0	8, 8
	70	66.1	100	—, 8
	75	75.1	110	—, 8
	80	75.1	110	—, 8
	85	77.1	121.5	—, 8
1280 x 1024	43 interlaced	50.0	80.0	4, 8
	47 interlaced	50.0	80.0	4, 8
	60	63.9	110	—, 8
	70	74.6	126	—, 8
	74	78.8	135	—, 8
	75	79.9	135	—, 8

*In the “Maximum color depth” column, the first number is the bits per pixel supported at 1 MB DRAM; the second number is the bits per pixel supported at 2 MB DRAM. A dash (—) means the color depth is not supported in that DRAM configuration.

VESA BIOS Extension modes

The VESA BIOS Extension supports the following modes in multiscan monitors. To determine which modes you can use with your monitor, run the VESATEST utility.

Resolution	Maximum color depth (bpp)	Graphics mode	Minimum DRAM (MB)
640 x 480	8	110h, 101h	1
	15 (5:5:5)	110h	1
	16 (5:6:5)	111h	1
	24 (8:8:8)	112h	1
800 x 600	4	102h, 6Ah	1
	8	103h	1
	15 (5:5:5)	113h	1
	16 (5:6:5)	114h	1
1024 x 768	4	104h	1
	8	105h	1
	15 (5:5:5)	116h	2
	16 (5:6:5)	117h	2

Fixed-frequency monitors

The following tables list the resolutions supported on fixed-frequency (non-multiscan) monitors. The color depths for 1 MB and 2 MB of DRAM are also listed. You cannot change refresh rate and other timing items for fixed-frequency monitors.

Macintosh 21-Inch Color Display

Refresh rate: 68.7 kHz (horizontal), 75.08 Hz (vertical)

Resolution	Color depth (bpp)	
	1 MB	2 MB
640 x 400	16	16
640 x 480	16	16
800 x 600	8	8
1024 x 768	not supported	8

Macintosh 21-Inch Monochrome Display

Refresh rate: 68.7 kHz (horizontal), 75.08 Hz (vertical)

Resolution	Color depth (bpp)	
	1 MB	2 MB
640 x 400	16	16
640 x 480	16	16
800 x 600	8	8
1024 x 768	not supported	8

Macintosh 19-Inch Color Display

Refresh rate: 60.2 kHz (horizontal), 74.9 Hz (vertical)

Resolution	Color depth (bpp)	
	1 MB	2 MB
640 x 400	16	16
640 x 480	16	16
800 x 600	8	8
1024 x 768	8	16

Macintosh 16-Inch Color Display

Refresh rate: 49.7 kHz (horizontal), 74.55 Hz (vertical)

Resolution	Color depth (bpp)	
	1 MB	2 MB
640 x 400	16	16
640 x 480	16	16
800 x 600	8	8

Macintosh Portrait Display (monochrome)

Refresh rate: 68.7 kHz (horizontal), 75.08 Hz (vertical)

Resolution	Color depth (bpp)	
	1 MB	2 MB
640 x 400	16	16
640 x 480	16	16

continued ▶

Macintosh 12-Inch Monochrome Display, 13-Inch Color Display, 14-Inch Color Display, and AudioVision Display

Refresh rate: 35 kHz (horizontal), 66.67 Hz (vertical)

Resolution	Color depth (bpp)	
	1 MB	2 MB
640 x 400	16	16
640 x 400	24	32 [†]
640 x 480	24	32 [†]

[†]32 is 24-bpp color data processed using a 32-bpp data format.

User-adjustable monitors

The following monitor types accept additional modes and display customization. You can customize monitors using the Install program, the ATI DeskTop program, or the Windows 95 Display control panel. You can add modes either by selecting a predefined monitor type or by manually selecting a set of modes. Consult the specifications for your monitor to ensure that it supports the mode you want.

- VGA/SVGA
- Apple Multiple Scan 15 Display
- Apple Multiple Scan 17 Display
- Apple Multiple Scan 1705 Display
- Apple Multiple Scan 20 Display
- AppleVision 1710 Display
- AppleVision 1710AV Display
- DDC 1 /2B monitor

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onscreen index. Open the Guide () menu and
choose Mac OS Guide;
then click the Index button.**

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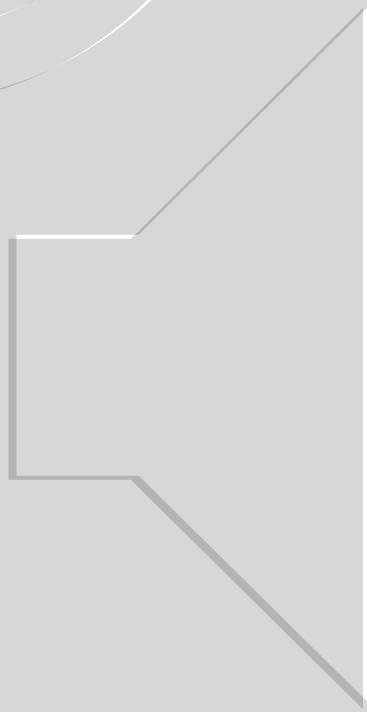
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PC Compatibility Card

*User's manual for Power Macintosh 4400 and 7300 series
PC-compatible computers*



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*To learn how to remove the card from your Power Macintosh 4400, see the *PC Compatibility Card Update* that came with your computer.

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*To learn how to reinstall the card into your Power Macintosh 4400, see the *PC Compatibility Card Update* that came with your computer.

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Communications regulation information

FCC declaration of conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. See instructions if interference to radio or television reception is suspected.

Radio and television interference

The equipment described in this manual generates, uses, and can radiate radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple's instructions—it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether your computer system is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio.
(That is, make certain the computer and the television or radio are on circuits controlled by different circuit breakers or fuses.)

If necessary, consult an Apple-authorized service provider or Apple. See the service and support information that came with your Apple product. Or, consult an experienced radio/television technician for additional suggestions.

IMPORTANT Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC Certification and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of Apple peripheral devices and Apple shielded cables and connectors between system components. It is important that you use Apple peripheral devices and shielded cables and connectors between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices. You can obtain Apple peripheral devices and the proper shielded cables and connectors through an Apple-authorized dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance.

Responsible party: Robert Steinfeld, Apple Computer, Inc., 1 Infinite Loop, Cupertino, CA 95014-2084, 408-974-2618.

Industry Canada statement

This Class B device meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la Class B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

VCCI Class 2 statement

情報処理装置等電波障害自主規制について

この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の基準に基づく第二種情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをしてください。



Quick Start

• • • •

Your Power Macintosh computer came with a PC Compatibility Card installed along with all the software you need to use it, including Windows 95. You can run Windows 95 applications directly on your Macintosh computer.

With a PC Compatibility Card, you can

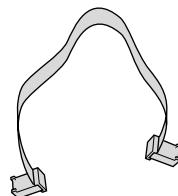
- simultaneously run Mac OS and PC applications
- switch between the Mac OS and PC environments at any time without quitting the applications you're using
- view both environments simultaneously on two monitors
- use the same hard disk for both Mac OS and PC software and files
- use your Macintosh-compatible keyboard and one-button or multibutton Apple Desktop Bus (ADB) mouse with PC software
- use your Macintosh-compatible modem, monitor, and printer with PC software, or connect some kinds of PC-compatible equipment
- use a joystick or other game controller with PC applications
- connect MIDI equipment (with an appropriate adapter)
- add random-access memory (RAM) to the PC Compatibility Card
- add 1 MB video dynamic random-access memory (DRAM) (on some models)
- use the built-in serial ports with PC software
- play and record from PC-compatible CD-ROM discs

- copy and paste information between Mac OS and PC documents
- play Sound Blaster-compatible sounds and use Sound Blaster sound processing utilities (Sound Blaster microphone and line input are not supported)
- communicate with network servers and other computers running PC software

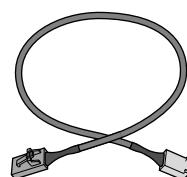
Also available for use with this card is a PC Serial and Parallel Card, with a standard PC RS-232 serial interface and PC-enhanced parallel interface, that allows you to use PC-compatible printers, modems, and security dongles from the PC environment. (This card is available from your Apple-authorized dealer.)

IMPORTANT If you have a Power Macintosh 7300 computer and ever need to remove and reinstall your card, instructions are provided in Appendix A and Appendix B. If you have a Power Macintosh 4400 computer, please see the *PC Compatibility Card Update* that came with your computer.

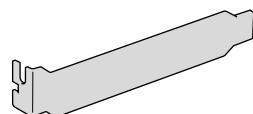
Note: Your Power Macintosh 4400 or 7300 PC-Compatible computer came with an audio cable and a port access cover that look like the corresponding illustrations below. You will need to install the appropriate cable and the port access cover if you ever decide to remove your PC Compatibility Card.



Audio ribbon cable for
Power Macintosh 7300



Audio cable for
Power Macintosh 4400



Port access cover

Getting started

This manual describes how to connect monitors and other equipment to your PC Compatibility Card, how to set up the software that came with your card, and how to work with the PC and Mac OS environments.

All the necessary PC Compatibility Card software has already been installed on your new computer. In addition, a drive container with Windows 95 has also been created and designated to be the startup disk for the PC environment. A drive container is a file on your computer's hard disk that acts as a hard drive for the PC environment. This 500 MB drive container (with Windows 95) is located in the Drive Containers folder on your hard disk.

To start using the PC environment, follow these steps:

1 Make sure that a monitor is correctly connected to the PC Compatibility Card.

For instructions on how to connect a monitor and other equipment to the PC Compatibility Card, see Chapter 1, "Connecting Monitors and Other Equipment."

2 Start up the Mac OS environment.

Wait until the Mac OS has finished starting up and the computer desktop and menu bar appear.

3 Switch to the PC environment by pressing ⌘-Return .

The Mac OS desktop disappears. (If you set up a dedicated monitor for the PC environment, the image on the Mac OS monitor dims.) After a moment the PC environment boots and then starts Windows 95.

The first time you run Windows 95, the Windows 95 setup program automatically starts.

4 Follow the instructions on the screen to set up Windows 95.

You need the Windows 95 Certificate of Authenticity number found on the cover of the Windows 95 manual that came with your PC Compatibility Card.

When you are asked to install printer drivers, click Cancel. To set up printing, see Chapter 3, “Setting Up the PC Environment,” after you have set up Windows 95.

5 To switch back to the Mac OS at any time, press $\text{⌘}-\text{Return}$ again.

Read the information in Chapter 3, “Setting up the PC Environment,” and Chapter 4, “Working in the PC Environment,” to learn more about the capabilities of your PC Compatibility Card.